The 13 Critical Tasks

An Inside-Out Approach to Solving More Gun Crime

by

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The 13 Critical Tasks: An Inside-Out Approach to Solving More Gun Crime
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This book is dedicated to all victims of firearm violence and their families, all men and women of law enforcement, the forensic scientists, prosecutors, and court and corrections personnel who are at the front lines, dealing with armed criminals and the aftermath of their violent acts; to all public administrators, policy makers, and private sector businesses that support those on the front lines by providing the guidance, resources, and tools needed to address violent crime; and last, but not least, to every one of us who is seeking a more peaceful and just way of life.

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What People Are Saying About The 13 Critical Tasks

"If you care anything at all about guns and crime, you have to read Pete Gagliardi's new book. Don't just put it on the shelf. Read it. Read it again and again until you need a new one. Gagliardi writes in an engaging style and clearly lays out everything you need to know about the mechanics and solutions to investigating gun crimes. Although he eschews mucking about in the social issues of crime and gun control—with good reason—this must be read by those who do. So many people who do care about that side and who fancy themselves as "experts" actually know virtually nothing about the down and dirty details of gun crimes and how real detectives solve them. If five stars is tops, I give this book a ten!" Tom Diaz, Writer.

"This book demonstrates the extraordinary crime solving potential of ballistics technology. A firearm in the hands of a criminal is a powerful destructive force yet that the same firearm can also be the Achilles heel that exposes the criminal to detection, arrest and conviction. The full utilization of the tools and best practices identified in this book should become the staples of professional policing that make our communities safer by targeting armed criminals." Bradley Buckles, former Director, Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF).

"Thousands are killed by gunfire each year and hundreds of thousands more are threatened or injured in robberies and assaults. In *The 13 Critical Tasks*, Pete Gagliardi lays out a practical set of ideas, supported by real-world examples, which can help cities address their gun crime problems now. He clearly shows that the harm done by armed criminals can be mitigated through the comprehensive collection and analysis of crime gun information and by achieving balance in the people, processes, and technologies mobilized to apprehend repeat gun offenders. This book is a must-have for law enforcement executives everywhere." Dr. Anthony A. Braga, Harvard University.

About This Book

This book is about reducing gun-related violence.

It is about targeting the **armed criminal** who fired his gun yesterday, fired it again today, and most probably will fire it again tomorrow.

It is about developing better ways to identify armed criminals who misuse guns and do harm to others, bringing those criminals to justice and removing them from the communities upon which they prey.

This is not a book about the social or economic drivers of violent crime. Recognizing that society must work on addressing the underlying social causes of violent crime, it must in the meantime relentlessly pursue every armed criminal who has engaged in a violent act.

The intent of this book is to share the author's some 50 years of experience and expertise in the firearm investigation and ballistics technology arenas.

It is the sincere hope of the author and the publisher (Ultra Electronics Forensic Technology) that those who are interested in improving the way in which firearm crimes are investigated may benefit from the information in this book and from the time saved by not having to retrace the author's steps.

This book advocates the presumptive inside-out approach to the investigation of crimes involving the misuse of firearms and makes a call to action.

The information in this book is based on a combination of personal lessons learned and best practices developed by others. The book's value stems from the unique opportunity that the author and the publisher have had to collect information from their almost daily interactions with the foremost law enforcement and forensic experts around the world.

This book focuses on taking the "presumptive/inside-out approach" to the investigation of crimes involving the misuse of firearms. This approach presumes that every gun generates information which, if well-managed, can be of significant value in helping to solve gun crimes. The book tackles this complex issue by dividing it into a series of logically-arranged tasks involving people, processes, and technologies. Each task is explained in terms of why it is important, what it entails, and how it is being implemented most efficiently and effectively by others.

While it takes an understanding of all of the tasks to fully implement an integrated and sustainable firearm crime reduction program, this book has been designed to be a flexible and ready reference for those readers interested in just a particular task or group of tasks. Since this book may not necessarily be read in sequence—as one reads chapter after chapter in a novel—some information has been repeated in various chapters for clearer understanding.

Prologue

The young ATF[1] agent had been on the job for roughly four years when he learned a lesson that would forever change the way he saw crime. This change altered the way in which he approached his life's work and, more importantly, would later help shape the way in which gun crime is investigated around the world. This new paradigm is still in use today—40 years later.

It wasn't so much an epiphany, but more a series of escalating lessons learned during the course of a not-so-ordinary murder investigation conducted in New Haven, Connecticut, in 1980.

The shooting took place one Friday night, about two weeks before Christmas. The victim, Perry Farnham, was a man who had been cooperating with police. In Hamden, a city contiguous to New Haven, police were investigating the theft of over a half-million dollars' worth of home heating oil. Farnham ran an environmental cleanup business located alongside the Ferry Street Bridge. An employee returning late from an oil spill cleanup found him dead on the concrete floor of the garage bay—his body lying next to one of the parked tanker trucks.

Nobody saw the shooters, but there was plenty of physical evidence: fired bullets and cartridge cases. A series of bullets was recovered from one of the garage bay walls and more were later removed from Farnham's body during the autopsy. Expended cartridge cases littered the garage bay floor and were also collected. None of this was particularly unusual, given the circumstances.

The evidence, including the brass on the floor, was sent to Ballistics for examination. There, experts would examine the unique markings left on the recovered fired ammunition components. When ammunition is discharged, the components—bullets and cartridge cases—come into forced contact with some of the gun's internal surfaces. The nature of the contact is such that the marks left on certain parts inside the gun during the manufacturing process become imprinted into surfaces of the fired bullets and cartridge cases.

By the next morning, an enormous amount of information began to pour out of the Ballistics Unit. Forming opinions exclusively from the examinations of the fired bullets and cartridge cases, the firearm examiners were able to tell detectives that the murder weapon was most probably an RPB Industries, model SM-10, .45 Auto/ACP pistol—the semiautomatic cousin to the MAC 10 fully automatic submachine gun. The RPB pistol could be readily converted to a machine gun and lots of people knew how to do it; with simple hand tools, and a few modifications, the gun could sustain full automatic fire with a single pull of the trigger. This fact, coupled with a crime scene photo depicting the telltale staccato pattern of the bullet holes in the garage bay wall, piqued the interest of the young ATF agent.

1 Bureau of Alcohol, Tobacco, Firearms and Explosives, U.S.A.

ATF firearm experts in Washington, D.C., would add an interesting piece to the puzzle: from the rifling pattern on the bullets, they would conclude that the murder weapon was one of about three thousand that had been made since RPB Industries began using a newly designed barrel configuration only three months prior to the shooting. This actionable information was the driver of the investigative strategy to try and identify all of the RPB, model SM-10, .45 Auto/ACP pistols with the new barrel design that entered the state of Connecticut. After all, the odds were not that bad; 3,000 guns were made and with 50 states, just how many could have possibly been sold at retail in a little state like Connecticut? If necessary, the next strategic step would be to expand the search outward from Connecticut to other states.

That step was never taken.

The good thing about a federal agency like ATF is that it has offices strategically located across the United States and in other countries as well. The best thing about ATF is that it has some outstanding investigators working in those offices.

ATF and the New Haven PD detectives launched a "collateral investigation request" for a records inspection to be conducted at the premises of the primary distributor for RPB Industries, located in Georgia. The request for assistance went to the ATF Atlanta office, not far from where the principal distributor was located. In a matter of days, detectives had an answer to their question "how many guns of the type used in the New Haven murder could have been shipped to Connecticut?" The answer was three—and all to the same gun dealer.

The young ATF agent and a New Haven PD detective visited the gun dealer and were able to identify the three purchasers of the guns in question by relying on the information contained on the outside of the guns: make, model, and serial number.

At one point during the investigation, one co-conspirator tried to reassure the other that they could not get caught. As he tried to make the point that the police had nothing to go on, he said during a conversation which was electronically monitored and recorded: "they got nothing—all they got is some brass on the floor". That may have been the attitude of some criminals toward the forensic science capabilities of the police back in 1980—but even back then it would prove to be a huge miscalculation.

The lesson learned here was to approach every crime committed with a gun with the presumption that every crime gun and piece of ballistic evidence can provide actionable crime-solving information of tactical and strategic value.

Some might call this lesson learned some 30 years ago an obvious one. Perhaps, but then why is it that something so obvious still remains undone or disorganized in most places around the world today?

Without a doubt, the police and forensic agencies that take this presumptive approach are among the most successful in dealing with firearm-related violent crime.

The Presumptive Approach: Every Crime Gun Has a Story to Tell

Why is the presumptive/inside-out approach needed?

Firearm-related violence is often cyclical and repetitive. Harvard Professor Anthony Braga, who has conducted a great deal of research in this area, said "Street gangs tend to get caught up in cycles of retribution. One shooting or one homicide tends to beget a series of homicides..."[2]

This type of repetitive violence has severe social consequences in terms of human suffering and the fear that it generates among those who live within its reach. It also has drastic economic impact in terms of the cost of crime to society in general and, more specifically, on the socioeconomic structure of the affected neighborhood.

In the late 90s, Duke University Professor Philip Cook and Georgetown University Professor Jens Ludwig estimated that, in the United States, the national, social cost of crimes in which the victim is shot and injured with a firearm is nearly $100 billion dollars.[3]

Ludwig observed that a reduction of the costs of violent crime can be attained by investing in certain targeted crime-fighting initiatives such as directing additional police resources towards the highest-crime neighborhoods, or towards the highest-cost parts of the crime problem, such as gang violence or gun violence.

2 Interviewed by Molly Lanzarotta, March 21, 2006.
3 ook, Philip J.; and Ludwig, Jens,; *Gun Violence: The Real Costs*, (Oxford University Press, 2000)

The fact is that people avoid doing business and socializing in areas where firearm violence is reported to be prevalent. The reports from around the world are all very similar as to the belief that crime involving the misuse of firearms is on the rise, particularly involving young people who feel that they are disrespected "on the street" and criminal gangs that operate across both regional and national boundaries.

Whether it be this presumptive/inside-out approach to the investigation of violent crime or any approach for that that matter, it is imperative that everyone understand "why". Why has society seen fit to outlaw crimes of violence and develop vast criminal justice systems to manage it all? Why do police, forensic experts and prosecutors do what they do to identify and stop killers and those who maim and injure others? The answer must be: *to seek justice for the victims, resolution for their loved ones, and peace and stability for their neighbors*.

What is the forecast?

A balance of diverse solutions must be implemented, ranging from addressing the underlying social and economic causes to improving the criminal justice system and law enforcement. The purpose of this book is to delineate two points that are integral to these solutions:

- Valuable information for law enforcement use can be extracted from crime guns and related evidence.
- People, processes, and technology solutions are available to help produce actionable information from this data and to help police solve and prevent gun related crimes.

The presumptive approach to the investigation of crimes involving firearms presumes that there is an abundance of data both inside every crime gun (which is transferred to bullets and cartridge cases) and outside every crime gun. When fully exploited, this data can be used to generate actionable information of tactical and strategic crime-solving value.

Valuable crime solving technology exists today. For example, automated ballistic identification systems, like **IBIS®** (*Integrated Ballistic Identification System* by Ultra Electronics Forensic Technology) can help police link a firearm seized during a routine car stop to a series of prior murders. Fired bullets and cartridge cases collected at one crime scene can be linked to a series of previous crimes. The police can then combine and leverage the bits of information known about each crime. With more "pieces of the puzzle" in hand, police can see a clearer picture of what transpired, helping them find a suspect more quickly. Automated ballistic identification systems have been carefully studied and have proven to provide a valuable service in helping to solve gun related crimes, particularly crimes lacking suspects or leads. When networked, these systems enable the quick searching of multiple ballistic databases across local, regional, and international jurisdictions, helping to produce leads that would have otherwise remained undetected.

Another example is firearm information management systems that are used to track the life cycle of a firearm. These systems allow police to trace the history of a crime gun. Commonly referred to as "crime gun tracing", this tracing process can provide leads to investigators which help identify armed criminals and firearm traffickers. It also helps police and policy makers accurately identify patterns and trends in illegal gun markets in order to design new enforcement strategies and tactics.

From practical experience, one thing is clear, unless we are able to collect and analyze accurate information about the criminal misuse of firearms across a city, state, province, or country, we cannot begin to apply effective law enforcement tactics and design new strategies to address the problem. Without this critical information gathered in a timely manner, we are destined to use inefficient work processes resulting in misdirected and wasted resources. Without timely information that can generate actionable intelligence, we are left blindfolded, with one hand tied behind our backs.

With witnesses generally reluctant to come forward in shooting cases—especially gang related ones—the most important thing for police is to have actionable information that can be acted upon.

What information is available for solving gun crimes?

Generally, the information falls into two broad categories: crime related and non-crime-related.

Crime related information triggers the moment the firearm is unlawfully possessed or used to commit a crime. It includes fired ammunition components—the bullets and cartridge cases discharged during the commission of the crime. Crime related information also includes other forensic data, such as DNA, fingerprints, and hairs and fibers which can help police identify the unlawful gun possessor.

Non-crime related information is collected in accordance with the law during the course of regulated commerce associated with the manufacture, distribution, sale, and transfer of firearms. Historically, policy makers have viewed regulatory controls as a means of preventing or minimizing the misuse of firearms. The regulatory systems that support these controls collect an enormous amount of information which can also be of significant value to police in developing tactics and strategies to deal with gun related crimes.

It is the capacity of law enforcement to lawfully and efficiently access this non-crime-related information which provides the ability to trace the history of legal transactions in what is commonly referred to as a gun trace pursuant to a criminal investigation.

It is the ability of law enforcement to legally and efficiently access this non-crime information which provides the ability to trace the history of legal transactions in what is commonly referred to as a gun trace pursuant to a criminal investigation. However, once the trace has been conducted, the trace information falls into the category of crime-related information and to be of value to tactical/strategic law-enforcement, it must be efficiently and effectively managed.

Some countries are taking steps to capture ballistic data from non-crime guns as part of the firearm regulatory process. This data becomes an additional identifier to be linked with the other non-crime related information required in the normal course of legal firearm commerce.

Where is the information?

The information is found in two places: inside the gun and outside the gun.

From the inside of the gun comes ballistic data in the form of unique markings left on fired ammunition components by the internal working parts of a gun.

From the outside comes identifying data in the form of make, model, and serial number that can be used to track the transactional history of the gun. For example, every gun made in the U.S. since 1968, by law, must bear certain identifying information that is visible on the outside, such as the name and location of the manufacturer and a unique serial number. In addition, gun manufacturers and dealers must keep certain records documenting their firearm acquisition and disposition transactions in the regular course of their business. Police can do a crime-gun trace to track the history of a recovered crime gun by following the "paper trail" of transactions from the day the gun was manufactured to its first retail sale.

In addition, other valuable forensic data, such as DNA, fingerprints, and trace evidence, which can help police identify the gun possessor, can be found on the surface-bearing areas of the firearm and ammunition.

How can the information be of value, both tactically and strategically?

For the purposes of this discussion, tactical information is information generated over the short term and which is of immediate value to an event or series of related events.

Strategic information is generally viewed here as information that is collected over the long term which can be used to identify patterns and trends for quantification and targeting purposes, informed decision making, and resource alignment.
Information on the inside and outside of a gun can have crime solving tactical value. For example, ballistic data from the inside can link a gang member's gun to a crime or series of crimes.

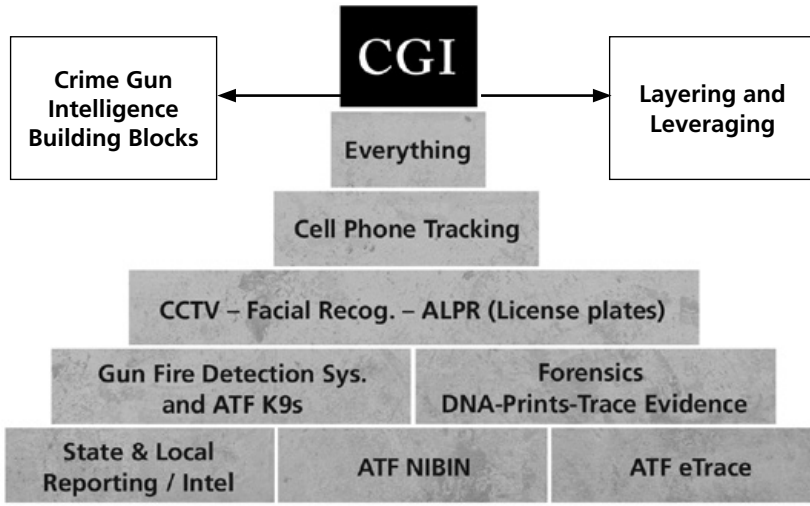
It can also link crimes in which the same firearm was used. Police can leverage the information known about each crime to generate additional investigative leads.
Crime-gun trace data on the outside of the gun, such as a serial number, is of tactical importance in helping police identify the first legal purchaser of the firearm. This can lead them to the person who used it in a criminal act. It can also be of strategic importance to help identify patterns and trends in crime

gun markets. And when there is more than one possible perpetrator, DNA and fingerprint data on the outside of the gun can help police identify the actual possessor. For example, consider the common police motor vehicle stop in which a crime gun is seized from under the front seat of a car occupied by four people. The question is, who actually possessed the firearm: the passengers, the driver or all four persons? Obviously, this information is important in sustaining a conviction when the possession of the firearm is unlawful. However, if the ballistic data was to tie the gun to a previous murder, the answer to the question of possession rises to an even higher level of importance.

When the information from inside and outside the gun is combined with quality analysis and evaluation from which conclusions may be drawn, it can be viewed as intelligence. This *Crime Gun Intelligence* (CGI), supports the policing mission and the practice of intelligence-led policing, leading to the reasonable suspicion that a crime has been or is about to be committed and the identification of the person or persons responsible. There are various types and sources of data, information, and crime gun evidence that can and should be collected and leveraged to generate effective CGI. The firearm itself is a good place to start.[4]

4 Pete Gagliardi, *In the Crosshairs: Crime Gun Intelligence.* The Police Chief, July 2018. (accessed 12-21-18, http://www.policechiefmagazine.org/in-the-crosshairs

CGI data encompasses information collected from far more sources than the firearm itself. It can come from gun fire detection systems, automatic license plate readers, cell phone locators, and private and commercial security cameras.



Crime Gun Intelligence: some of the building blocks

Just as a home run in baseball will not score if the base runner fails to tag a base, an investigator missing a CGI "base" (data) may never learn the full story that the crime gun holds. The old saying "we don't know what we don't know" also applies to crime guns. Therefore, every piece of potential CGI should be viewed with the presumption that it may hold valuable information which, when leveraged, can help advance investigations and help solve and prevent violent crimes.

This issue of tactical and strategic information of value and CGI gathered when employing the presumptive / inside-out approach will be discussed further in upcoming chapters.

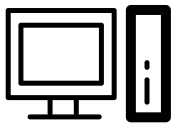
Key Considerations

- Ensure there is a firearm regulatory structure in place at any government level whereby information about the legal commerce in firearms is recorded and accessible to law enforcement for crime gun tracing.
- Consider whether the law enforcement and forensic capacity and tools exist to collect and process all of the available crime related and non-crime related information from inside and outside the gun. This includes ballistics, ballistic networks, DNA, fingerprints, hair, fibers, trace evidence, firearm transaction records, gunfire detection systems, automatic license plate readers, cell phone locators, and private and commercial security cameras.
- Determine whether there are efficient and effective protocols and processes in place to collect, manage, and share the input and output information in a sustainable and legally appropriate way.
- Consider whether the processes that are in place are institutionalized up, down, and across affected organizations.
- Evaluate the degree to which the presumptive approach has been used. At a minimum, electronic crime gun tracing and automated ballistic testing should be done.
- Determine whether a comprehensive strategy exists to ensure that the information generated through the presumptive approach is being used for both tactical and strategic intelligence purposes.

Summary

The Most Important Thing
Think and act together with key stakeholders representing the police, forensic services providers and prosecutors to develop comprehensive CGI strategies, including the presumptive / inside-out approach, focused on the investigation of crimes involving firearms.

The Next Step
The next chapter discusses the important role that technology can play in helping to sustain the presumptive approach and generate substantial crime solving and prevention benefits.



Technology Helps Sustain Processes

Why adopt and adapt?

Stakeholders must adopt and adapt to provide people with the tools needed to help increase efficiency and effectiveness as well as sustain processes.

People will always be the principal driver in any crime reduction solution. However, people can become more efficient and effective by using good processes supported by technology.

Consider the science of firearm examination or, as some call it, forensic ballistics. One of the key processes in the presumptive approach to firearm crime investigation is forensic firearm examination in order to exploit the ballistic data present on the inside of the gun.

For over 100 years, police have relied on forensic ballistics to link fired bullets and cartridge cases to each other and to crime guns that were in police custody. The court-tested theory has remained unchanged for 100 years: every gun leaves unique microscopic markings on the surface areas of fired bullets and cartridge cases. Experts use comparison microscopes to compare markings, identify similarities that positively link them together to conclude that the ammunition components were fired from the same gun.

However, up until about 25 years ago, the process of examining ballistic evidence was a very labor intensive and time-consuming task.

Only firearm examiners could perform analyses and the work was often reactive in nature. It typically involved a situation in which police had a gunshot victim, a suspect, and a smoking gun. The firearm examiner's job was to determine whether the bullet taken from the victim was fired from the smoking gun that had been found in the hand of the suspect, and to be prepared to testify to that effect in court.

The proactive nature of the forensic ballistics discipline was somewhat limited by the nature of the work, which involves infinite combinations of microscopic markings pitted against the human capacity for memory. It sometimes happened that a firearm examiner would remember a particular mark or series of marks

that stood apart from the others for some reason. But this was rare. Most often, the proactive use of the discipline involved hunches. For example, a detective who had just recovered a gun from a suspect had a hunch that it may have been used in a particular murder. The detective would ask the firearms examiner to test-fire the gun and compare the test-fired samples to the fired bullet and cartridge case evidence collected from the murder scene.

For many years this was the way things were done. It was an impossible and improbable task for a ballistics lab with large firearm evidence caseloads to be able to sustain the comparison of every piece of ballistic evidence coming into the lab against every other piece in the entire inventory. It was impossible because of resource and time constraints and it was improbable that the resources would have been devoted to a manual process without the aid of technology.

The preceding chapter concluded that the ability to sustain the types of processes required in taking the presumptive approach when investigating gun crime is the key to crime solving success. Technology can help people sustain these processes.

How can we adopt and adapt?

Through technology advancements in automated ballistic identification systems, ballistic information sharing networks, firearm tracing systems, automated fingerprint identification systems and other areas as well.

Automated Ballistic Identification Systems

In the early 1990s, the manual processes of forensic ballistics analysis received a boost of speed and sustainability with the introduction of automated ballistic identification technology with systems like IBIS and DRUGFIRE[5].

Ballistic imaging technology like IBIS leverages the power of computers to capture digital images of the unique markings impressed on fired bullets and cartridge cases by the internal working parts of the gun, and then stores this information in a database. With lightning speed, the technology is able to search a particular image of a bullet or cartridge case against the inventory of other images in the database and rank them in order of the highest likelihood of a match for subsequent confirmation by an expert. IBIS technologies process information in both two and three dimensions, providing more powerful data matching, and visualization and comparison tools.

5 DRUGFIRE was a technology developed under the FBI. In 1999, ATF and the FBI agreed to select IBIS as the technology standard for the National Integrated Ballistic Information Network (NIBIN) and the DRUGFIRE systems were replaced by IBIS.

IBIS technology's crime-solving value has been clearly established through rigorous academic and scientific study. IBIS and NIBIN[6] have been ardently endorsed by the International Association of Chiefs of Police (IACP) and by government leaders and policy makers around the world.

The benefits of adopting new technology in support of the presumptive approach far surpass speed alone. Technology can bust barriers, helping law enforcement personnel sweep through backlogs to quickly identify shooters before they have a chance to shoot and kill again.

Also, because IBIS technology enables technicians to generate crucial lab work that later can be used by expert firearm examiners, there are cost efficiencies to be realized with technicians versus firearm examiners in terms of lower training time and pay requirements. The time needed to train a technician is far less than the time needed to train a firearm examiner. Technicians performing data entryand other tasks help support the experts and keep them focused on the more productive, higher level outputs. The efficiencies gained by the use of technicians also make it possible for a lab to sustain the comprehensive imaging of more ballistic data and the generation of more proactive investigative leads.

When users can adapt to new processes, technology can help sustain higher levels of efficiency and effectiveness. This has been the case in cities, counties and states such as Boston, Camden, Chattanooga, Chicago, Cincinnati, Denver, Houston, Los Angeles, Miami, Milwaukee, New Haven, New York, Orlando, Philadelphia, Pittsburgh, Phoenix, West Palm Beach, Santa Clara County, New Jersey, and internationally in South Africa, the United Kingdom, Australia, Israel, India, and INTERPOL (The International Criminal Police Organization).

Doreen Hudson, the former Assistant Director of the Los Angeles Police Crime Lab, shows us how she adapted to change and adopted new processes in her lab. After adapting to the use of ballistics technology in her lab, she conducted a study to determine if she needed to adopt new work processes centered on the technology. She wanted to determine what factor or factors should drive the ballistic comparison work of the Ballistics Unit. Should the lab continue to depend on the old way of doing business in which a police officer would request a ballistics comparison based on received information or on a hunch that a gun had been used in a particular crime? Or, would it be better to let the technology identify possible ballistic matches and have the firearm examiners focus their time on making those comparisons and confirmations?

6 NIBIN: ATF's National Integrated Ballistic Information Network. ATF has made NIBIN available to law enforcement agencies in every major metropolitan area in the U.S. The grid that connects nationwide IBIS users is called NIBIN. Currently there are almost 200 NIBIN partners (mostly state, county, and city law enforcement agencies or crime laboratories) in possession of IBIS systems at over 200 locations. ATF administers the high speed network over which the units communicate. [Source: Police Chief Magazine, December, 2009].

When operating on hunches, her study concluded that her firearm examiners were producing positive information for investigators only about 30 percent of the time (information that linked evidence from two different crimes scenes or a piece of ballistic evidence to the gun that fired it). This is not to say that the firearm examiners were not doing good work—they certainly were. The problem, as Ms. Hudson saw it, was that 70 percent of the time when following up on hunches, the firearm examiners were confirming, according to old police jargon, a "negative result". In other words, they were spending their valuable time proving that the gun under examination was *not* the murder weapon. While this type of information could be useful in eliminating a suspect or a specific gun amongst a group of suspected guns, the reality was that it did little to help detectives advance their investigations of shooting crimes.

With limited resources and evidence from an explosion of violent gang activity pouring into her lab, Ms. Hudson tried to find a better way. She conducted a study whereby the IBIS technology was linked to the NIBIN database in order to drive the lab's casework. The premise was simple, all ballistic evidence from shootings and all test-fires from guns seized during police investigations would be imaged into the IBIS systems in her lab and then searched against the NIBIN database for possible matches. If matches were found, her team of firearm examiners would contact the detectives involved and follow-up on the cases, if appropriate. When Ms. Hudson compared the performance measures of this study, she reported that when using technology to guide her processes the firearm examiners were providing positive information to detectives well over 70 percent of the time—a complete 180-degree reversal from what the hunches had produced. Relying on the benefits of technology to drive the LAPD's ballistics work, Ms. Hudson later saw that 70 percent positive result statistic increase to 80 plus percent.

The data networking capability of IBIS represents an enormous benefit that essentially changes the rules of the game. Many barriers to the presumptive approach can be overcome through the use of wide area data communication networks.

Consider this all-too-common example: Police in New Haven, Connecticut, recover a 9-millimeter pistol from a street-corner dealer during a drug bust. Considering the fact that there have been many drug related shootings in the neighborhood where the pistol was recovered, the police officers would like the firearm checked through NIBIN. Many cities like New Haven rely upon services provided by state or county crime labs which serve a number of police agencies throughout the region.

Therefore, police officers must generally perform the following steps in order to have a firearm like the pistol in the example above checked against NIBIN:

1. Complete the agency's process for taking property into custody.
2. Indicate that the pistol is being sent to the state crime regional lab for examination.
3. Prepare the paperwork for transmitting the pistol to the lab and for the request for forensic services.
4. Preserve the integrity of possible evidence on or in the pistol and package it for transportation to the lab.
5. Drive or ship the package to the lab.
6. The lab must then receive the package and verify the inventory of its contents.
7. The lab follows its process for opening up a package and taking custody of the pistol.
8. The lab assigns a priority to the examination and the pistol sits in the evidence storage area awaiting its turn for examination.
9. The time eventually arrives for the examination to take place and the pistol is processed according to the lab's protocol, not only for the specific check requested by the police officers.
10. Most often, firearms are examined in their entirety. This includes a variety of measurements, such as various barrel dimensions, class characteristics, safety mechanisms, and trigger-pull requirements.
11. Firearms must also be processed for DNA and latent fingerprints.
12. Eventually the pistol will be test-fired and the test-fires will be entered and searched against NIBIN.
13. The person to whom the case is assigned will prepare a lab report to document all processing that was conducted on the firearm and will then forward it to an internal review process.
14. After the report reviews are completed, the evidence will be released and a report forwarded to the requester.
15. The requester will have to make arrangements to collect the evidence and have it transported back to the police department.
16. The evidence must be re-entered into the agency property inventory record and storage area.

At best, this process can take weeks; it will most likely take months and maybe even years.

The question that must be asked is: How long do these sixteen steps take to execute in your jurisdiction? Do not believe any answer that is unaccompanied by hard data collected in an independently monitored time trial. If a time trial has not been conducted—then conduct one. Discussions or decisions on current performance outputs, such as time, must be based on facts rather than speculation. Back to the New Haven example above: consider the consequences if the lab report returned to New Haven indicated negative results—no matches to any evidence in the national database. All that effort was expended just to produce a negative results report. This would only happen a few times before a police officer thinks twice about going through all this trouble again.

Cops take gambles every day out on the street and they quickly become masters at running and playing the odds. They may quickly tire of jumping through somebody else's hoops only to receive reports with negative results. If there's no shortcut, they may simply avoid the situation. Labs look at these issues too and use such feedback when establishing casework priorities. **It's plain and simple: a gun not associated with any crime at time of recovery will be assigned the lowest priority by the lab.**

Everyone loses if the police and crime scene technicians cease submitting firearm evidence to the lab. The cops lose the benefit of the useful information to be gained through the presumptive approach, the labs lose their purpose, justice is ill-served, and the public suffers. The only winners are the criminals. This state of affairs is likely more common than many people may think. It is commonly known in the law enforcement community that there are many federal, state, and local law enforcement agencies which do not send all of the guns that they recover to the lab for ballistic testing even when there is a ballistics technology networked database to search against. Why? Most probably because the process required for doing so is bureaucratic, labor intensive, or otherwise unsustainable.

While street cops and agents hate paperwork-laden bureaucratic processes —and this is understandable—they appreciate anything that can really aid them in their crime solving missions.

What if the lab report in the New Haven scenario had indicated a positive result, that the pistol that was submitted for test-firing was actually linked to one or more crimes in the neighborhood? This fact would translate into "points on the board", but only if the turnaround time was such that the information represented a fairly fresh investigative lead for police to follow. The longer the turnaround time, the less potential value of the information, the less enthusiastically it will be received, and the less likely it will be put to good use. There is one exception to this harsh reality—cold cases; any information which heats up a cold case always translates into "points on the board".

Irrespective of the situation and the motivational value of the information, a lengthy intelligence producing process is generally undesirable. **The longer it takes to identify the shooters (like habitually armed criminals, drug traffickers, and violent street gangs), the more opportunities they will have to shoot and perhaps maim or kill again.**

The acceptable amount of time required to process this data and develop this type of intelligence should be determined not by the practitioners or bureaucrats but rather by the public they both serve.

When faced with a family grieving over the murder of a loved one, do any of the following statements communicate that justice will be served?

- "We'll get to this case when we can."
- "We are short of resources."
- "Our first priorities are shootings by police and cases going to trial."

Technologies exist today that are field proven and widely attainable. When adopted and put to use, they can provide sustainable ways to accelerate processes like national ballistic information database checks and overcome the unnecessary and bureaucratic process described in the New Haven scenario above, which by the way is not the way they operate today. The New Haven PD with its forensic services and prosecuting attorney partners, is one of the most efficient and effective managers of Crime Gun Intelligence today.

A number of other enlightened and locked-on law enforcement agencies have done just that. They've adopted new technology and adapted their procedures to include a new way of working that was made possible by the technology. For example, the West Palm Beach and Phoenix Police Departments have adopted the highly automated IBIS technology which makes it possible for them to launch a search of the NIBIN database from their offices in the police department within hours of test-firing a suspected crime gun. The next day, the lab can determine if there is a probable match. From this point on, the process advances with confidence that time and resources are being well spent.

The fact that the NIBIN data entry was performed outside the lab by the police means that the lab did not have to do it. The police department removed that burden from the lab's shoulders. The experts at the lab can then focus on what they do best—rendering their expert opinions. It is a win for the police in that they have significantly shortened a process that—at best—once took several weeks (or was never done at all) and reduced it to less than the time it takes to get a suit back from the cleaners.

There may be some who will try to find fault with this more efficient and effective process and it is their right to disagree. Their motives may range from being purely process-oriented to "protecting their turf"—sometimes it can be hard to tell. This is why **no single stakeholder should be given the unquestionable authority and power to make such an important and wide-reaching decision without the collaboration of the other stakeholders.** All affected stakeholders should collaborate on the development of a crime gun processing protocol. Stakeholders include, but are not limited to:

Police • Forensic personnel • Prosecutors

Ballistic Information Sharing Networks

As business has become more global, so too has crime. Drug cartels are teaming up with organized street gangs to extend their reach and range. As drugs and other contraband move through channels which transcend international boundaries, guns and violence follow. There is a growing interest in sharing information about firearm-related crime between countries—and the movement is well under way.

National Integrated Ballistic Information Network (NIBIN)

In 1993, ATF launched an initiative that four years later would become the National Integrated Ballistic Information Network (NIBIN). NIBIN is a national database of digital images of cartridge cases that have been collected from crime scenes or test-fired from confiscated weapons.[7] Networks like NIBIN can share critical data quickly across widely separated geographical regions. For example, a firearm that has been seized for cause during a routine car stop in one city can potentially be linked to a murder or series of murders that occurred in a different city miles away.

What's more, fired evidence collected at one crime scene can be linked to one or more other crimes. NIBIN has been carefully studied by researchers and has proved to be a valuable tool in helping to solve gun-related crimes, particularly those lacking suspects or leads.[8, 9]

In 2016, ATF established the *NIBIN National Correlation and Training Center* (NNCTC) to expand training for NIBIN users and to provide timely expert data analysis services to NIBIN partners who do not have quick access to their own

7 In addition, a limited number of agencies also submit fired bullets for NIBIN analysis. National Institute of Justice, *Law Enforcement Use of the National Integrated Ballistic Information Network (NIBIN)*, 2013, https://nij.gov/topics/lawenforcement/investigations/Pages/nibin.aspx

8 National Research Council, *Ballistic Imaging*, eds. Daniel L. Cork et al. (National Academies Press, 2008).

9 William King et al., *Opening the Black Box of NIBIN: A Descriptive Process and Outcome Evaluation of the Use of NIBIN and Its Effects on Criminal Investigations*, October 23, 2013.

services. A major success of the NNCTC has been its track record in providing an ever-growing list of partners with timely and actionable NIBIN Leads.[10]

Scandinavian Network

In the late 1990s, Denmark, Norway, and Sweden lay claim to the first international ballistic sharing initiative between the three countries. In fact, the world's very first international IBIS match was a product of that Scandinavian initiative.

Canadian Integrated Ballistics Identification Network (CIBIN)

In 2006, the United States and Canada also began sharing IBIS ballistic data between their respective national networks, NIBIN in the United States and the Canadian Integrated Ballistics Identification Network (CIBIN) in Canada.

INTERPOL Ballistic Information Network (IBIN)

In May 2009, INTERPOL and Ultra Electronics Forensic Technology, the developer of IBIS, launched a new public-private partnership that allows INTERPOL to act as the world's first international hub for the cross-border exchange of ballistic data.

In an effort to give INTERPOL member countries access to essential investigative tools, INTERPOL is providing the network through which any INTERPOL member country that is equipped with IBIS will be able to share and compare ballistic data. This *INTERPOL Ballistic Information Network* (IBIN) is the only large-scale international ballistics data sharing network in the world.[11]

RIBIN: CARICOM and the British Overseas Territories

CARICOM (Caribbean Community) is planning to enhance forensic and ballistic capabilities, in particular strengthening the *Regional Integrated Ballistic Information Network* (RIBIN), in order to tackle terrorist access to illegal firearms.[12]

Representatives of the British Overseas Territories Conflict, Stability and Security Fund (CSSF) have been assisting the Royal Cayman Islands Police Service (RCIPS) with equipment and training to serve as a territory "hub" for the analysis of ballistic data gathered during criminal investigations in the Caribbean and

10 Hearing Concerning Oversight of the DEA and ATF, Before the Committee on the Judiciary, Subcommittee on Crime, Terrorism, Homeland Security, and Investigations, 115 Cong. (April 4, 2017) (statement of Thomas E. Brandon, Acting Director of the Bureau of Alcohol, Tobacco, Firearms, and Explosives).

11 INTERPOL Ballistic Information Network (IBIN), retrieved from http://www.interpol.int/Crime-areas/Firearms/INTERPOL-Ballistic-Information-Network-IBIN (November 2013).

12 CARICOM Counter-Terrorism Strategy adopted at the Twenty-Ninth Inter-Sessional Meeting of the Conference of Heads of Government of the Caribbean Community (CARICOM) at Port-au-Prince, Haiti, on 26-27 February 2018. Accessed on 1-19-2019 at https://www.state.gov/documents/organization/285295.pdf

cross-referencing it with information provided by the INTERPOL Ballistic Information Network.[13] The RCIPS serves as the "hub" responsible for the generation of Ballistic Crime Gun Intelligence for Anguilla, Bermuda, British Virgin Islands, Turks and Caicos, and Monserrat. With the exception of Monserrat[14], each of these Overseas Territories has the ability to acquire its own bullet and cartridge case exhibits directly from its own IBIS system and then upload the exhibit information to the RCIPS hub.

13 Cayman News Service. RCIPS opens as forensic BOT hub in ballistics.. 20-04-2017. Accessed on 1-19-2019 at https://caymannewsservice.com/2017/04/rcips-opens-as-forensic-bot-hub-in-ballistics

14 Monserrat sends double-casted clones of their exhibits to Anguilla for IBIS entry.

Firearm Records and Tracing Systems

ATF eTrace[15] (Electronic Tracing System)

eTrace is a Web-based system that allows participating law enforcement agencies to submit firearm traces on U.S. sourced firearms (e.g., U.S.-manufactured or imported) to the ATF National Tracing Center (NTC). Authorized users, including international users, can receive firearm trace results via this same Web site, search a database of all firearm traces submitted by their individual agency, and perform analytical functions.

INTERPOL Illicit Arms Records and tracing Management System (iARMS)[16]

The INTERPOL *Illicit Arms Records and tracing Management System* (iARMS) is a state-of-the art tool that facilitates information exchange and investigative cooperation between law enforcement agencies in relation to the international movement of illicit firearms, as well as licit firearms that have been involved in the commission of a crime.

iARMS is an information technology system that provides a common global platform for firearms-related information exchange and cooperation, namely through:

- Providing a centralized system for the reporting and querying of lost, stolen, trafficked and smuggled firearms by law enforcement agencies globally.
- Facilitating the submission of, and responses to, international firearms trace requests including support to monitor the status of trace requests.

IBIS Firecycle™

Firecycle is a Web-based firearm information management solution that can efficiently track the life cycle of a firearm, from manufacture, through various transactions and, ultimately, to final disposition or destruction. One of Firecycle's strengths is its integration with IBIS-generated ballistic data into a comprehensive firearm crime prevention and enforcement program. Because they are designed as compatible information technology solutions, Firecycle and IBIS can quickly and easily share data over communication networks and across multiple jurisdictions. Together, Firecycle and IBIS allow for a sustainable solution for improving and increasing the capacity to collect, maintain, and share critical firearm information.

15 www.atfonline.gov/etrace

16 INTERPOL, *About iArms*, http://www.interpol.int/Crime-areas/Firearms/INTERPOL-Illicit-Arms-Records-and-tracing-Management-System-iARMS (October 2013).

Fingerprint Identification Systems

Integrated Automated Fingerprint Identification System (IAFIS)

IAFIS is the U.S.-wide computerized system for storing, comparing, and exchanging fingerprint data in a digital format that permits comparisons of fingerprints in a faster and more accurate manner. IAFIS is a repository of criminal history information, fingerprints, and criminal subject photographs, as well as information regarding military and civilian federal employees and other individuals as authorized by Congress.[17]

DNA Indexing Systems

CODIS (Combined DNA Index System)[18] is a software program that operates local, state, and national databases of DNA profiles from convicted offenders, unsolved crime scene evidence, and missing persons. Every state in the United States has a statutory provision for the establishment of a DNA database that allows for the collection of DNA profiles from offenders convicted of particular crimes. CODIS software enables all law enforcement crime laboratories to compare DNA profiles electronically, by matching DNA profiles from crime scenes with profiles from convicted offenders thereby linking serial crimes and suspects.

17 FBI, *Privacy Impact Assessment Integrated Automated Fingerprint Identification System National Security Enhancements*, https://www.fbi.gov/services/records-management/foipa/privacy-impact-assessments/iafis

18 https://www.fbi.gov/services/laboratory/biometric-analysis/codis

Gunfire Detection Technologies

ShotSpotter®

Gunfire detection systems, such as ShotSpotter® utilize acoustic sensors placed strategically around a defined area to immediately pinpoint and record the sounds and locations of gunfire and dispatch law enforcement to the site of confirmed gunfire. These technologies help bridge information gaps caused by the public not reporting shots fired. These systems can also be more accurate in pinpointing the actual location of gunshots than the human ear because of various physical and environmental factors that can affect a person's perception of the direction from which a sound emanated.

Additional Technologies

Investigators should consider all available technology systems as potential sources of CGI to help advance their investigations, including, but not limited to, closed caption television (CCTV) systems, cellphone locators, automatic license plate readers, facial recognition systems, and intelligence management software. They can add significant CGI value when "layered" into CGI operations and leveraged with the data elements from the previously-mentioned technologies.

In summary, technology has been proven to be an indispensable crime-fighting tool for law enforcement. Some technologies can be applied toward a broad category of crimes. For example, fingerprint and DNA technologies are applied to crimes involving anything from arson to zip guns, helping to link a particular person to a particular crime.

Automated ballistic identification technologies generally link a gun to a particular crime or series of crimes and link two or more crimes together by identifying that they were committed with the same firearm. Ballistics technologies can help police link crimes, guns, and suspects, and have been shown to be particularly effective in situations involving gang violence.

CASE STUDY: STOCKTON, CALIFORNIA

In Stockton, California, Gang and Homicide investigators teamed up with their own ballistic imaging specialists, state prosecutors, and forensic experts to form a true crime-solving partnership targeting Cambodian Street Gangs.

Over a three-year period, the partners relied on the NIBIN network and IBIS ballistic imaging technology to link evidence from 83 gang-related shootings and test-fires from 35 seized firearms, two of which were machine guns.

From the IBIS links, police generated actionable intelligence leading to the execution of 55 search warrants and the arrest of 25 "gangsters" for six murders, 22 firearm assaults, and 50 drive-by shootings.

In the end, 16 criminals were convicted for crimes involving the murders and shootings. The criminals received lengthy prison sentences including life without parole as well as one death penalty verdict.

CGI producing networks such as NIBIN can share critical data quickly across multiple jurisdictions. These networks provide enormous strength and value because certain evidence that may seem insignificant to the agency that is entering the data can be the missing link that breaks open a case for an agency in a nearby jurisdiction. The more evidence that is entered into the system, the more crimes, guns, and suspects that will be linked, and the more information investigators will have to put violent criminals behind bars. The evidence of one can now be the evidence of all.

Recommended Best Practices

- Adopt and adapt to the technology available. Adopt what you need and adapt to its highest degree of usefulness and be prepared to adopt any new processes required to get to that level.
- Map the current processes that are in place for managing the information inside and outside the gun (e.g., firearm transaction record keeping, ballistic examination, fingerprints, DNA, hairs, and fibers) to identify the bottlenecks.

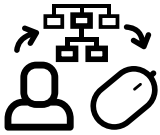
Key Considerations

- Understand where you are and where you want to go in terms of your current capabilities to collect and process the crime related and non-crime related information needed to exploit the information inside and outside the gun.
- Identify potential wide area networks for cross-jurisdictional and cross-discipline (e.g., ballistics, fingerprints, DNA, firearm transaction records) data processing and sharing.

Summary

The Most Important Thing
Adopt new crime fighting technologies and adapt to the change in processes required to maximize the technology's benefits of increased speed and productivity; then layer and leverage the data from each system in order to identify armed criminals more quickly, before they have an opportunity to shoot and kill again.

The Next Step
While technology plays a key role in helping to sustain the presumptive approach, crime-solving success is dependent on much more. The next chapter deals with the importance of balancing people, processes, and technology for sustained success crime solving success.



People, Processes, & Technology

Why do we need all three?

"Murder is unique in that it abolishes the party it injures, so that society has to take the place of the victim and on his behalf demand atonement or grant forgiveness; it is the one crime in which society has a direct interest."

W. H. Auden poet & critic (1907–1973)

When one member of society harms another intentionally it is generally called a crime. A society seeking peace and justice for all must hold criminals accountable. So it is the people who have the responsibility to find the perpetrators, try them in a court of law and, if found guilty, prevent them from doing further harm.

People can become more efficient and effective in solving and preventing crime through the use of innovative processes and applied technology. Technology can help speed up and sustain processes and make people more productive. However, technology is useless without people who can use it in an efficient manner.

CASE STUDY: CHICAGO, ILLINOIS

A drive-by shooting occurred in which a 19-year-old man was killed and another was wounded. Fired cartridge cases were retained as evidence from the crime scene and entered into the NIBIN database using IBIS technology.

Eight years later, police stopped a vehicle with a shattered rear window and seized a Glock pistol.

Several months later, the crime lab used IBIS to search the test-fires from the Glock pistol against the NIBIN database. The NIBIN query linked the test-fires to the evidence from the earlier drive-by shooting. Police knew that they had the murder weapon in hand.

ATF traced the transaction history of the murder weapon to a woman who bought the gun the day before the murder in question. She told investigators that she bought the gun for her boyfriend named Coggs. Coggs was a felon and therefore unable to buy guns legally. She gave police the names of several potential witnesses.

Police interviewed one of those witnesses—he had been with Coggs when he killed the 19-year old during the drive-by shooting. The witness testified before a grand jury.

Coggs, a one-time enforcer for the "Gangster Disciples" street gang was arrested and charged with the murder, he was later convicted and imprisoned.

This case highlights three critical points:

- It takes people, processes, and technology to adopt the presumptive approach.
- The ballistic data from inside the gun and the identifying data from outside the gun must be exploited.
- Information must be generated and used in a timely fashion.

The Three-Legged Stool

Just as each leg of the three-legged stool depends on the other two legs to carry their part of the load, a properly balanced combination of people, processes, and technology is needed to solve crime in today's society.

The Chicago case is an excellent example of "every crime gun has a story to tell". It also calls attention to the need for determining the right balance that must be applied to a given crime problem in order to develop timely solutions.

Finding the right combination of people, processes, and technology and applying it in a properly balanced manner requires a deliberate and collaborative effort on the part of all stakeholders (e.g., police, forensic, prosecutorial).

The temptation exists for some stakeholders to try and put in-place programs that will further their own group's interests. This is dangerous because it can stifle innovation, breakdown the spirit of collaboration between the stakeholders, and divert attention from crime-solving.

The initiative to which the people, processes, and technology will be directed must have a well-aimed objective:

Provide timely and sustainable benefits to the public

Placing public interest at the forefront of the discussion and decision-making process will shift the stakeholder's perspective from an internal focus to an external focus. An external focus will cause the stakeholder to think differently about potential solutions, rather than approaching the problems from their own internal perspectives. Impediments, such as inter-agency politics and "turf protection" tend to fade when the discussion is redirected externally to protecting the public. Allowing these obstacles and introspective intentions to upset the proper balance will eventually cause the three-legged stool to topple.

This concept of balancing people, processeses and technology was tested in a study by researchers at Sam Houston State University. Their study examined the impact of new personnel, processes, and technology on ballistic evidence processing productivity at the Stockton Police Department's Firearms Unit.

They concluded that: "*Gagliardi argues that the productivity of ballistics units can be enhanced by 'finding the right combination of people, processes, and technology'. Our analysis of data from the SPD's Firearms Unit suggests that the adoption of new people, processes, and technology was associated with a rapid and substantial increase in productivity as measured using confirmed ballistic hits.*"[19]

Recommended Best Practices

The 13 Critical Tasks Workshop (provided by Ultra Electronics Forensic Technology) brings the principal criminal justice stakeholders together and leads them through a step-by-step collaborative process to generate consensus on ways that gun crime in their region can best be investigated and prevented. The workshop promotes the proper tactical and strategic utilization of important crime data (actionable intelligence) so that it can be translated into law enforcement actions. The workshop also introduces the stakeholders to a number of proven best practices that have helped others address their gun crime problems. Most importantly, the workshop provides a facilitated forum for stakeholders to develop a sustainable gun-violence reduction program, one that balances people, processes, and technology so as to serve the best interests of the public.

19 Edward R. Maguire et al., *Testing the Effects of People, Processes, and Technology on Ballistic Evidence Processing Productivity*. Police Quarterly, 19(2), 2015, 199-215. https://doi.org/10.1177/1098611115618374

Key Considerations

- **People:** Identify the key cross-jurisdictional stakeholders and think and act together as a group to design a well-balanced comprehensive solution that can be institutionalized.
- **Processes:** Ensure that all of the information available on the inside and outside of gun is collected and exploited for crime-solving purposes, as policy - part of the standard operating procedure (SOP) for investigating crimes committed with firearms. The SOP must become institutionalized—up, down, and across the affected stakeholder organizations.
- **Technology:** Adopt and adapt to technology with the purpose of providing stakeholders with the tools they need to help them be more efficient and effective in their work.
- **People, processes, and technology:** Balance all three so as to provide CGI to investigators in a timely manner which will provide maximum crime-solving benefits to the public.

Summary

The Most Important Thing
Understand that balancing people, processes, and technology is not only an objective but also a means to overcome obstacles and bridge gaps to achieve the goal which is to provide sustainable and substantial crime-solving benefits to the public we all serve.

The Next Step
The desire for the achievement of sustainable benefits for the public is what drove the development of *The 13 Critical Tasks*. The next chapter details the reasoning that went into the development of this project and the outcome of those efforts.

Development of the 13 Critical Tasks

Why were they developed?

Ultra Electronics Forensic Technology Inc. provides solutions that assist law enforcement agencies around the world in their efforts to reduce violent crime. As a solutions provider, Ultra Electronics Forensic Technology has noted that while some agencies stand out as highly successful users of IBIS, others do not. "Power users" share many things in common in terms of the critical tasks they perform in order to sustain their successes.

How were they developed?

In May 2005, in an effort to see as many customers as possible achieve the maximum benefits from their IBIS investment, Ultra Electronics Forensic Technology began an aggressive project to identify the tasks that are critical to operating an efficient and effective ballistic information sharing network. A core working group was formed; it consisted of experienced IBIS power users, members of the academic community, and Ultra Electronics Forensic Technology personnel who were experienced in forensic ballistics, firearm crime investigation, and the IBIS technology.

The core working group contributed best practices by drawing upon their personal experiences with IBIS or by reporting on observations they had made during visits to other IBIS power users around the world. The core group also searched for commonalities in the ways in which power users integrated ballistics technology into their crime solving processes.

All of this information was used by the core working group to answer one very carefully crafted question: **"What critical tasks must be performed to operate an efficient and effective integrated ballistic information network program that provides substantial and sustainable crime solving benefits to the public?"**

A great deal of care went into drafting the question because the quality and accuracy of the answers received are often dependent on the content of the question itself. With the specific intent to expand the group's thinking well beyond the forensic discipline of firearm examination and the IBIS technology, the question was revised and tweaked numerous times. Key words like: efficient, effective, integrated, program, substantial, sustainable, crime solving, benefits, and public were inserted after much discussion and with deliberate meaning attached.

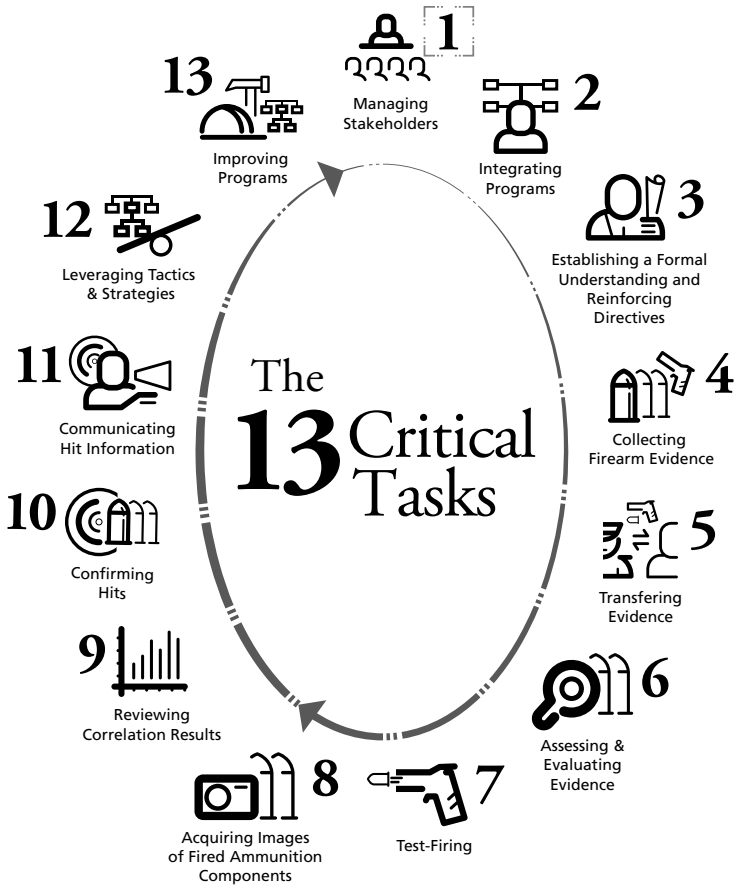
The Results

As a result, *The 13 Critical Tasks* were developed. They form the basis for a complete firearm crime-solving program, because perhaps with the exception of the two strictly ballistics related tasks (i.e., test-firing and image acquisition) they also relate to most forms of CGI. This book and the *The 13 Critical Tasks Workshop*, go well beyond just being a set of best practices for using ballistics technology. They delve deeply into the tasks that must be addressed when establishing sustainable CGI protocols and ways in which to balance the people, processes, and technology to do so. Protocols are needed in order to collect and analyze all of the available CGI data that can be obtained from crime guns and related evidence for crime solving and crime prevention purposes.

These commonsense steps can be used to help identify and establish a series of consistently applied protocols to ensure that all of the valuable information from inside and outside of a crime gun and other available bits and pieces of CGI are exploited by police and forensic agencies in a given region so as to generate leads to stop armed criminals before they can do more harm.

The 13 Critical Tasks

1. Managing Stakeholders
2. Integrating Programs
3. Establishing a Formal Understanding and Reinforcing Directives
4. Collecting Firearm and Related Evidence
5. Transferring Evidence
6. Assessing and Evaluating Evidence
7. Test-Firing
8. Acquiring Images of Fired Ammunition Components
9. Reviewing Correlation Results
10. Confirming Hits
11. Communicating Hit Information
12. Leveraging Tactics and Strategies
13. Improving Programs



Asking the Right Question

Crime solving benefits and *public*: These words identified satisfying the public as the ultimate objective. With this goal in mind, the core working group looked at improvements in firearm crime-solving from the public's point of view, instead of that of the police or the forensic labs. The public isn't interested in agency rivalries, feuds, and excuses like "that's their job not ours" or "that's our job not theirs". The public wants law enforcement agencies to use common sense and good judgment. Therefore, during the core working group's discussions, the interests of the public were always at the forefront and served as a standard to be met. The personnel, processes, and technology employed by the police, the forensic lab, and the prosecuting attorney were certainly a major focus of the core working group's analysis, albeit from the external and service-oriented perspective when determining how resources could be best used to provide sustainable crime solving benefits to the public.

If you are still not convinced, then try replacing the word "public" with "police", "forensic lab" or "prosecuting attorney" at the end of the carefully-crafted driving question and see what answers come to mind.

Efficient and effective: These words were intended to ensure that, in terms of people, processes, and technology, the invested time and effort were worth the resulting rewards.

Integrated and program: These words were intended to ensure that informational and institutional bottlenecks that interfere with crime solving success were eliminated up, down, and across the affected stakeholder organizations and that programs of action would be created so that they would be well defined, adequately funded, and measured for efficiency and effectiveness.

Substantial and sustainable: These words were intended to ensure that the benefits delivered would be considerable, not inconsequential. The levels of people, processes, and technology required for success must be able to be maintained for as long as required. Successful crime reduction programs and processes must be institutionalized so that they may instinctively be recognized as the proper way of doing things.

Summary

The Most Important Thing

Follow *The 13 Critical Tasks* developed by law enforcement and forensic practitioners in consultation with renowned academic researchers, to integrate tactics and strategies to provide substantial and sustainable firearm crime-solving benefits to the public in an efficient and effective manner.

The Next Step

The next chapter discusses the fundamentals of task number one of *The 13 Critical Tasks*—Managing Stakeholders.

TASK 1

Managing Stakeholders

Why do we need to manage stakeholders?

The reduction of violent crime is a complex problem and the task is too large and difficult for one lab, police department or prosecutor to manage alone. Only the right combination of stakeholders can plan and implement the improvements needed to reduce violent crime. Yet, the involvement of more stakeholders results in more diverse perspectives, which translates into more issues and requirements that need to be addressed. Success often depends on the ability to address a problem from a variety of fronts. All of the right people involved must be thinking and acting together—not only at the outset, but throughout the entire process. Plain old cooperation will not be enough to drive stakeholder management—a stronger action is required. The level of action needed is best described by the word **collaboration**. It becomes a fundamental driver for securing a sustainable solution capable of delivering substantial benefits.

Taking the presumptive/inside-out approach to the efficient and effective investigation of gun crime begins by assembling the right groups of people and getting them to think and act together.

The Three Slices of the "Investigative Pie"

To better understand why stakeholder management requires so much attention in terms of getting the people involved in the investigative process to think and act together, cut the investigative pie into three slices or phases of the process:

1. Respond to the incident and collect information and evidence.
2. Analyze the initial information collected and extract actionable intelligence.
3. Identify, arrest and prosecute criminals.

There will be different people with different job descriptions and skills working within and across each of the three investigative phases. They will often report

to different chains of command and different organizations as well. For example, the response to a homicide may well involve personnel from Patrol, Crime Scene Investigation, Investigative Services, the Coroner/Medical Examiner's Office, and the District Attorney's Office. Similarly, the Extract & Analyze Phase will involve people with a different set of skills than the first responders, such as forensic experts, intelligence analysts who report to different chains of command and organizations. The same holds true for the Identify, Arrest & Prosecute phase, especially in terms of how the Offices of the State and Federal Prosecutors coordinate actions with law enforcement officials and forensic labs. It is important know **beforehand** just how all of these investigative assets will think and act together as a team. "Handshakes", in reality formal agreements developed in collaboration with representatives from the key stakeholder groups can help make the process most efficient and effective. These agreements can help ensure the smooth, accurate and timely "handoffs" of crucial information and evidence across the three phases. To ensure that all important information gets where it needs to go and when, any natural gaps that may exist between the phases (e.g., different chains of command, organizations, etc.) should be bridged with sustainable policies and procedures.

Different Stakeholders—Different Needs

The following quotes are taken from the Chicago Sun-Times article "Top cop McCarthy tells aldermen of plan to close three stations, redeploy officers"[20]. They are attributed to Chicago Police Superintendent Garry McCarthy and his Chief of Detectives Tom Byrne.

"*It takes between six months and eight months to get back ballistic hits from the [state] crime lab. That's a big problem for me because that's basically past history. We need real-time turnaround,*" McCarthy said. "*If we can get ballistics matches in real-time, [Chief of Detectives] Tom Byrne is gonna have a much easier job solving those crimes. They'll lead us to who has the guns.*"

In addition to being "spot-on" accurate in terms of the value of timely information for solving gun related crimes, their statements also give rise to the discussion of another issue related to the fact that crime solving today involves the collaboration of many stakeholders and requires a careful balance of people, processes, and technology.

When it comes to ballistics data from fired ammunition components found at crime scenes, **different stakeholders can have different needs**. For example, forensic scientists processing ballistics data for evidentiary purposes in court must exercise careful due diligence in following certain protocols. The use and value of ballistics data as evidence in court is well established and is perhaps the use most familiar to people.

Yet police investigators also rightly view ballistics data in terms of producing the actionable intelligence or the investigative leads needed to identify a suspect in the first place.

With the technology available today in networks like the National Integrated Ballistic Information Network (NIBIN), police can use ballistics data to readily link crimes, guns and suspects across geographical separated areas (e.g., cities, states and countries) in effect preventing criminals from escaping detection by crossing into another jurisdiction. Police recognize that in order for this information to be of most use—it must be generated in a timely manner.

Two stakeholders—two different missions and perspectives—add the prosecutors into the equation and we now have three missions and perspectives running on three separate tracks towards the same goal—bringing violent criminals to justice. Obviously there are even more stakeholders, the public administrators and legislators who must provide and manage the policy solutions and resources to enable effective crime fighting today and to everyone one of us who are affected by crime and violence.

20 Chicago Sun-Times, November, 2011.

The article mentioned above provides an example of the first step: communications between stakeholders.

The solution to the issues raised in the article will come when the key stakeholders sit down to think and act together to find a way in which to balance the people, processes, and technology needed to achieve the violence reduction goal they all seek.

Forming Groups

In order to assemble groups, there must be an influential senior level policy advocate or advocates to champion the concept. The champions must have the clout needed to bring the various stakeholders together in an effective spirit of collaboration and partnership.

Champions can be bred along the way as part of the stakeholder management process—step one of *The 13 Critical Tasks*. One way of doing this is to convene two groups of key stakeholders.

Strategic Group

The first group of stakeholders is policy oriented and should be made up of key senior managers and policy makers representing, at a minimum, three broad criminal justice perspectives: police, forensic, and prosecutorial. It is from this first group that the champions of the presumptive approach should emerge. This group should be kept as small as possible yet should represent the major police, forensic, and prosecutorial organizations at the local, county, and state levels serving the targeted affected crime region[21]. Representatives from certain federal agencies must also be included in this group (e.g., in the U.S., ATF and the U.S. Attorney's Office). This group must be strategically oriented and empowered to create vision, mandate new policy, provide direction, and request resources. This group can produce multiple champions.

For example, Massachusetts had several champions representing major city police organizations (the Boston Police Department, the state police and forensic labs), the Department of Public Safety, ATF, and the state and federal prosecutor's offices. This small group of champions had the influence and leadership required in order to drive law enforcement policy for the entire Commonwealth of Massachusetts.

Tactical Group

The second group of stakeholders is operation oriented and should be made up of mid-level managers, first line supervisors, and line practitioners from the various interdependent units within the police, forensic, and prosecutorial services which have a role to play in taking the presumptive approach to the investigation of

21 The affected crime region is a geographic area in which criminals are most likely to be crisscrossing police jurisdictions in the course of their criminal activities (e.g., gang activity and drug trafficking).

crimes involving the misuse of firearms. This second group should also consist of representatives of organizations at the local, county, state, and federal levels that serve the targeted affected crime region. This second group must be tactically oriented and must represent the various interdependent subgroups charged with enforcing the law and supporting the judicial process (e.g., patrol, investigations, special units, forensics, and prosecutors). The members of this tactically oriented group are experts at what they do. They know what is working well and what needs to be improved. They can quickly identify their people-, process-, and technology-related needs as well as the obstacles blocking their way and the gaps they must bridge.

Two very different examples of the importance of influential champions to the formation of these working groups come to mind.

In the first example, a simple form letter to a mayor whose city was in the process of coming to grips with increasing levels of gang- and gun-related crime, trickled down through the Police Chief to the Commander of Investigations. Instead of pushing back, the Commander kept an open mind and—while powered by the inertia created by the mayor's referral— seized upon an opportunity to bring the various stakeholders together to discuss gun crime protocols. This effort went on to develop a very successful program which is the subject of a case study in the final chapters of this book.

The other example is one in which key law enforcement stakeholders were brought together by senior state and federal officials to discuss the merits of a statewide crime gun processing protocol. One key stakeholder was immediately averse to the prospect. This was problematic because the stakeholder's lab provided forensic services for most of the police agencies in the state. The stakeholder was concerned that more work would simply be dumped on them without regard for their capacity to respond, so he pushed back. The influential government leaders in the room assured the stakeholder that no new workloads would be imposed unless he was balanced in terms of people, processes, and technology. The stakeholder left the meeting unconvinced. A second meeting was held about two months later. This time, the recalcitrant stakeholder reported that over the intervening period between the two meetings, it was noticed that more evidence was being received and more hits were being made. The stakeholder attributed this to the common-sense messages delivered at the first meeting about the value of regional crime gun protocols. The stakeholder said "it's working already". From that point on, the stakeholder who had been pushing back took the lead, asserted rightful ownership of the project, and moved it forward.

Meetings

A series of meetings with each working group should be conducted by experienced facilitators and structured to efficiently manage the attendees' time. The meetings should surface relevant issues, identify obstacles and gaps, and ensure sustainability of the solutions that are formulated by identifying the proper balance of people, processes, and technology. The meetings should also identify how the presumptive approach will be employed and how success will be measured. This includes how the tactical and strategic information needed for crime solving and crime prevention is developed, processed, and shared in a timely and sustainable manner.

Collaboration becomes the key component for developing a sustainable crime solving and crime prevention program based on the presumptive approach.
The strategic group should meet first in a relatively short facilitated session (i.e., no more than two or three hours) designed to provide an overview of the many issues and handoffs involved in using the presumptive approach when investigating gun crimes. The goal of this policy maker's session is to generate high level commitment to enlist the people, processes, and technology required for the presumptive approach.

Once the strategic policy makers commit to moving forward and champions emerge, the onus then shifts to the tactically oriented group.

The tactical group should meet in a one- or two- day facilitated session. The meeting should begin by presenting the same information that was presented to the strategically oriented group of senior policy makers, laying out the issues and handoffs required in taking the presumptive approach. This group must then delve more deeply into the various issues. It must formulate recommendations regarding the people, processes, and technology that will be required and then forward the recommendations to the strategic policy makers for approval, resource fulfillment, and promulgation.

The 13 Critical Tasks Workshop **was designed to facilitate this meeting process and provide the in-depth analysis required for the development of a CGI program based on the presumptive approach for dealing with gun crime.**

Assuming that such a program is recommended and authorized, the requirement for effective stakeholder management continues as an essential element of program implementation. **Therefore, a process for continued stakeholder management for both the strategic (policy) and tactical (operations) working groups will be critical to developing and, more importantly, to sustaining the collaborative partnership.**

Recommended Best Practices

New York COMPSTAT

In 1994, William Bratton, who was then Commissioner of the New York City Police Department, implemented a crime control model called COMPSTAT (Computer Statistics) to allow maximum intelligence sharing based on four tenets: accurate and timely intelligence, effective tactics, rapid deployment, and relentless follow-up and assessment. Years later, Bratton would become Chief of the Los Angeles Police Department where he implemented the COMPSTAT model for the tactical and strategic deployment of resources to fight crime. Below is a brief of Chief Bratton's COMPSTAT[22] model:

> *"Accurate & Timely Intelligence: COMPSTAT eliminates the traditional barriers among the various organizational units through weekly meetings designed to bring the affected units together to review the computer data and discuss ways to combat crime in specific places. The meetings serve as a forum in which precinct and other operational unit commanders communicate the problems they face to the agency's top executives, while also sharing successful crime reduction tactics with other commanders. Since today's policing techniques nearly always consist of vast amounts of information, it is necessary to provide a vehicle wherein essential information can easily and effectively be shared with all levels of the organization.*
>
> *Effective Tactics: COMPSTAT tactics encourage "thinking outside the box" and mandates that every resource, both internal and external, is considered in responding to a problem. On a weekly basis, police compile a statistical summary of the week's crime complaint, arrest and summons activity, as well as a written recapitulation of significant cases, crime patterns, and police activities. COMPSTAT tactics also provide for a sense of urgency in responding to problems.*
>
> *Rapid Deployment: Every case (e.g., shooting incident) is thoroughly and rapidly investigated in a systematic manner. With COMPSTAT, the police make use of vital intelligence regarding emerging crime trends or patterns that allows for a rapid strategic police response. The strategic response can be in many forms, both traditional and non-traditional operations.*

22 www.lapdonline.org/crime_maps_and_compstat/content_basic_view/6363

Relentless Follow-up and Assessment: Follow-up and assessment of results are an essential part of the process. Data is presented on a week-to-date, prior 30 days, and year-to-date basis, with comparisons to previous years' activity. Precinct commanders and members of the agency's top management can easily discern emerging and established crime trends, as well as deviations and anomalies, and can easily make comparisons between commands."

In applying the COMPSTAT model to the presumptive approach discussed in this book, the collaborative planning discussions and the effective sharing of information must also extend beyond the local police organization to include the forensic and prosecutorial stakeholders, and other local, state and federal partners as well.

Project Safe Neighborhoods (PSN)

Project Safe Neighborhoods, a program that is administered by the United States Department of Justice (DOJ), is an outstanding example of a pyramid of champions that is focused on reducing gun and gang violence by collaborative stakeholder planning and execution, leveraging and integrating programs, communication and outreach, and personal accountability. PSN also adds another very important element that is critical for success—**the resources to help get the job done.** PSN helps provide the participating stakeholders with the tools they need in terms of people, processes, and technology.

The following information can be found on the Project Safe Neighborhoods Web site: www.justice.gov/psn

PSN is a nationwide commitment to reduce gun and gang crime in America by networking existing local programs that target gun and gun crime and providing these programs with additional tools necessary to be successful. Since its inception in 2001, approximately $2 billion has been committed to this initiative. This funding is being used to hire new federal and state prosecutors, support investigators, provide training, distribute gun lock safety kits, deter juvenile gun crime, and develop and promote community outreach efforts as well as to support other gun and gang violence reduction strategies.

PSN is based on three fundamental principles, specifically it is:

- **Community-based:** *Gun crime is local, and the resources available to address it vary from district to district. Accordingly, any national gun crime reduction program must remain sufficiently flexible for jurisdictions to implement it in a way that both responds to the specific problem in that area, and accounts for the particular local capacities and resources that can be dedicated to it.*

- **Targeted:** *Programs that ensure coordination between the enforcement, deterrence and prevention efforts are more likely to succeed than those that do not.*

- **Comprehensive:** *While enforcement is a necessary and important aspect of crime reduction programs, the most successful initiatives marry enforcement with prevention and deterrence efforts.*

National Integrated Ballistic Information Network (NIBIN)

NIBIN is the world's first national ballistic information sharing network that is capable of processing both fired bullets and cartridge cases on a single platform. Within the ballistic network context, NIBIN is a best practice model for stakeholder management. As of May 2018[23] the following information appears in the ATF NIBIN Fact Sheet:

> *In 1999, the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) established the National Integrated Ballistic Information Network (NIBIN) to provide local, state and federal law enforcement partner agencies with an automated ballistic imaging network. NIBIN is the only national network that allows for the capture and comparison of ballistic evidence to aid in solving and preventing violent crimes involving firearms. It is a resource that is vital to any violent crime reduction strategy because it provides investigators with the ability to compare their ballistics evidence against evidence from other violent crimes on a local, regional and national level, thus generating investigative links that would rarely be revealed absent the technology.*
>
> *Since the program's inception in 1999, NIBIN partners have captured approximately 3.3 million pieces of evidence of ballistic evidence and confirmed more than 110,000 NIBIN Hits, but the true performance metric of NIBIN is the successful arrest and prosecution of shooters.*
>
> *NIBIN success requires adherence to the four critical steps:*
>
> 1. *Comprehensive Collection and Entry: Partner agencies must collect and submit all evidence suitable for entry into NIBIN, regardless of crime. Evidence includes cartridge cases recovered from crime scenes, as well as test-fires from recovered crime guns.*

23 NIBIN Fact Sheet, Bureau of Alcohol, Tobacco, Firearms and Explosives. May 2018. https://www.atf.gov/resource-center/fact-sheet/fact-sheet-national-integrated-ballistic-information-network

2. *Timely Turnaround: Violent crime investigations can go cold very quickly, so the goal is to enter the evidence into the network as quickly as possible in order to identify potential NIBIN Leads and subsequently provide this relevant and actionable intelligence to the investigators.*

3. *Investigative Follow-Up and Prosecution: Linking otherwise unassociated crimes gives investigators a better chance to identify and arrest shooters before they reoffend.*

4. *Feedback Loop: Without feedback, NIBIN partners cannot know how their efforts are making the community safer, which is necessary for sustained success.*

Only crime gun evidence and fired ammunition components pursuant to a criminal investigation are entered into NIBIN. Therefore, NIBIN cannot capture or store ballistic information collected at the point of manufacture, importation, or sale; nor purchaser or date of manufacture or sale information. For more information on NIBIN go to https://www.atf.gov/firearms/national-integrated-ballistic-information-network-nibin.

Memorandum of Understanding (MOU): NIBIN Partners enter into an MOU with the U.S. Department of Justice (DOJ), Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF). The MOU establishes and defines a partnership between the parties that will result in an ATF National Integrated Ballistic Information Network (NIBIN) system installation, operation, and administration for the collection, timely analysis, and dissemination of crime gun data to enhance the efforts of law enforcement to integrate resources to reduce firearms violence, identify shooters, and refer them for prosecution.

National Crime Gun Intelligence Governing Board (NCGIGB): ATF manages the NIBIN Program in collaboration with a National Governing Board comprised of senior Federal, State and Local police administrators, forensic lab managers and prosecutors. The NCGIGB works in concert with ATF to recommend and provide guidance as to NIBIN operations. For example, in July of 2018, ATF, through the NCGIGB, established minimum required operating standards (MROS) to ensure the consistency, integrity, and success of NIBIN. In summary the MROS includes the following subjects:

- **STANDARD 1. QUALITY ASSURANCE PROGRAM:** Requires each site to establish, follow and maintain a documented quality system that is appropriate to the NIBIN acquisition and correlation processes and is equivalent to or more stringent than what is required by these Standards.

- **STANDARD 2. ORGANIZATION AND PERSONNEL:** Requires each site to have a Program Administrator and sets criteria for program personnel.
- **STANDARD 3. FACILITIES:** Requires each site to have a facility that is designed to ensure the integrity of the NIBIN analyses as well the evidence.
- **STANDARD 4. EVIDENCE CONTROL:** Requires each site to have and follow a documented evidence control system to ensure the integrity of physical evidence.
- **STANDARD 5. PROCEDURES:** Requires each site to have and follow written procedures for all steps of the NIBIN process; these procedures must be approved by the NIBIN Program Administrator.
- **STANDARD 6. CORRECTIVE ACTION:** Requires each site to establish and follow a corrective action plan to address processes and procedures when the minimum required operating procedures are not met.
- **STANDARD 7. AUDITS:** Requires that sites undergo an ATF audit on a biennial basis, once every two years.

National Ballistics Intelligence Service (NABIS)

The National Ballistics Intelligence Service delivers fast-time forensic intelligence as well as tactical and strategic intelligence to tackle all aspects of firearms related criminality within the UK. It grew as a textbook case involving stakeholder management, collaboration, and program integration. It began with several key presumptive-approach champions.

The following information can be found on the NABIS Web site at: www.nabis.police.uk

> *The National Ballistics Intelligence Service aims to provide a world leading intelligence capability that builds upon existing good practice to ensure that we are in the best possible position to allow UK law enforcement agencies to quickly solve crimes where firearms have been used. NABIS is committed to identifying the few individuals who actively import, store and supply illegal firearms and to track down the people involved in illegally converting or adapting firearms. There are four regional NABIS Forensic Hubs which operate within four host forces/organisations: Greater Manchester Police (GMP), West Midlands Police (WMP), Metropolitan Police Service (MPS) and the Glasgow unit of SPA Forensic Services. The four NABIS hubs are staffed by Forensic Scientists who have experience and expertise in the examination of firearms and ballistic item, and alongside the NABIS Intelligence Cell and Central Team, piece together the movement and life of a gun and how it affects the criminal use of firearms throughout the UK.*

NABIS provides:

- *A database (registry) of recovered firearms and ammunition used in crime, or enter police possession through any means. This Database provides strategic and tactical intelligence which helps to guide law enforcement activity.*
- *A ballistics comparison capability to link crimes and incidents within 24 to 48 hours in urgent cases.*
- *An Intelligence Cell tasked with developing, understanding and disseminating strategic and tactical intelligence to police forces and Law Enforcement Agencies (LEAs).*
- *An operational support team who develop liaison opportunities between NABIS and its partners, as well as delivering national communications and media strategies.*

NABIS works with the police forces of England, Wales and Scotland as well as partner LEAs such as Police Scotland, British Transport Police (BTP), Ministry of Defence Police (MODP), MI5, National Crime Agency (NCA), the UK Border Force (BF) and the Police Service of Northern Ireland (PSNI).

Critical Elements

- Develop a senior level champion who has enough influence to drive the initiative to bring all the right people into the process.
- Identify and assign participants for the strategic (policy) and tactical (operations) stakeholder groups.
- Conduct a facilitated presumptive approach awareness session for the strategic stakeholder working group to generate a broader consortium of champions.
- Conduct a facilitated presumptive approach protocol development workshop for the tactical stakeholder working group and transmit recommendations to the strategic group.
- Plan to integrate existing programs for leveraging the presumptive approach.
- Plan, develop, and implement a sustainable regional program to quickly generate crime solving and crime prevention benefits by taking the presumptive approach to the investigation of crimes involving the misuse of firearms.
- Be prepared to communicate the new program protocols and expectations to all affected stakeholders.
- Establish an ongoing process of performance monitoring between the two working groups to ensure that the initiative is well coordinated and is achieving the intended objectives.
- Communicate clearly and often.

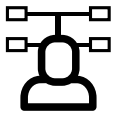
Key Considerations

- Assemble the right teams of people and sustained collaborative interaction.
- Clarify each stakeholder's input and output needs.
- Map the stakeholder's current processes to identify existing bottlenecks, obstacles and gaps.
- Avoid bottlenecks that delay and hinder investigative progress.
- Create new and sustainable protocols that are balanced in terms of people, processes, and technology.
- Employ a continuous communication process with affected stakeholders—up, down, and across their various organizations.
- Formally recognize and reward specific achievements to: a) enrich stakeholder feedback, b) increase success story collection, c) facilitate communication of the program's value, d) heighten stakeholder motivation.
- Validate the sustainability of successes through program reviews and corrective actions.
- Institutionalize the new protocols within the affected organizations through policy directives.

Summary

The Most Important Thing
Develop a champion or champions that have the power to drive change at the required levels to assemble the various stakeholders needed for taking the presumptive/inside-out approach and to provide or advocate for resource support for the people, processes, and technology tools that will be needed.

The Next Step
In a manner that is analogous to the way in which bridge cables are constructed, integration and leveraging can help provide crime solving programs with the sustainable strength needed to deliver substantial public safety benefits. The next chapter discusses the fundamentals of task number two of The 13 Critical Tasks—Integrating Programs.



TASK 2

Integrating Programs

Why do we need to integrate programs?

Look around the law enforcement community and you will find many ingenious crime reducing programs. Some agencies have dozens of programs that correctly approach the crime problem from various perspectives.

For example, Project Exile is a program that focuses on career criminals whose unlawful possession of firearms exposed them to lengthy minimum mandatory prison sentences effectively removing them from the communities that they preyed upon.

Also, *Operation Ceasefire* (also known as the Boston Gun Project), and various spinoffs, is a problem-oriented policing initiative aimed at homicides committed by young people in Boston. Stakeholders were brought together from law enforcement, the community, and academia to help find solutions.

Anti-crime programs viewed as individual "silos" and executed within organizational "stovepipes" are, overall, less efficient and less effective at solving crime. They waste time and resources and, by their nature, cause important information to fall through the gaps. They are simply not as strong as they could be.

Effective crime fighting improvements must have the strength needed to sustain the delivery of expected benefits over long periods of time. Crime solving improvements that cannot be sustained are not improvements at all and can actually have the opposite effect, especially in terms damage to the public's trust and confidence in government.

Steel Cables

Consider the following analogy. Suspension bridges carry heavy loads and need great strength which comes in large part from the massive cables that support them. The construction of a bridge cable can provide a lesson for leveraging the power of programs through integration. Each cable gets its strength from the integration of many individual filaments of steel wire. The strength of each individual filament of wire is leveraged by weaving them together into steel "ropes". The much stronger ropes are then leveraged in the same way to form a cable. This escalating continuum of integration not only gives the bridge cable the strength it needs to sustain its load but the fabrication methodology itself provides an efficient and effective way to build the bridge.

Much in the same way that bridge cables are constructed, integration and leveraging can help provide crime solving programs with the sustainable strength needed to deliver substantial public safety benefits. For example, consider this fairly typical scenario. Law enforcement agency "X" has three firearm crime-related programs in operation: (1) NIBIN for linking guns to crimes, (2) eTrace[24] for linking people to guns, and (3) crime mapping software for plotting the locations of "calls for service" incidents. Each program is run by a different unit of the organization, separated by function and supervision. NIBIN is situated under the Forensic Services Unit, eTrace under the Investigative Services Unit, and crime mapping under the Planning and Research Unit. The three programs are, for the most part, silos functioning and providing information within each one's own domain.

For example, in the Forensic Services Unit, crime guns and ballistic evidence are being processed through NIBIN. The fired bullets and cartridge cases found at crime scenes are being linked to each other and to the guns that fired them. In the Investigative Services Unit, crime guns taken into police custody are being traced through eTrace. Detectives are learning the names of the people who purchased them and are pursuing that information. The crime mapping efforts that are ongoing in the Planning and Research Unit are helping the senior command staff visualize the hot spots needing attention in the city.

24 eTrace (Electronic Tracing System) is an Internet-based system that allows participating law enforcement agencies to submit firearm traces to the ATF National Tracing Center (NTC). Authorized users can receive firearm trace results via this same Internet Web site, search a database of all firearm traces submitted by their individual agency, and perform analytical functions.

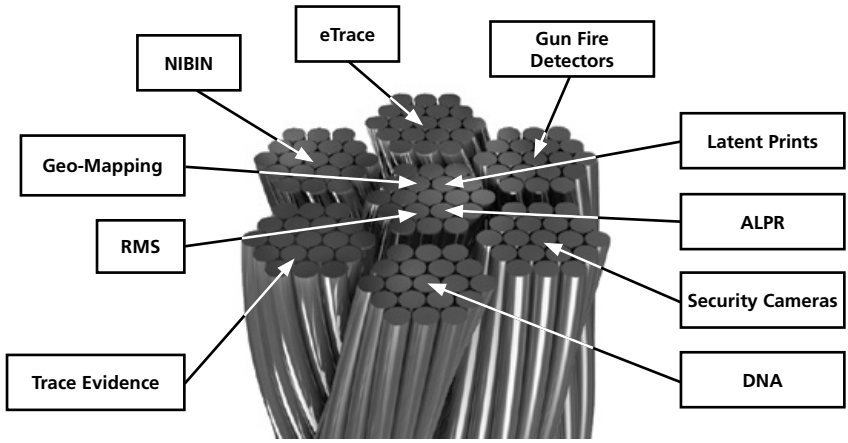
Now, picture the same scenario but with two significant changes:

First: assume that the three units involved are co-stakeholders operating in a manner structured to ensure collaboration as noted the "Task 1 – Managing Stakeholders" chapter.

Second: assume that they have taken the steps required to integrate and leverage the information from their three independently executed programs, as recommended in this chapter.

With these two changes in play, the eTrace data containing crime gun descriptions and the names and addresses of purchasers and sellers, and the *NIBIN data* with its crime gun and ammunition descriptions and identified links to crimes *are all being plotted on the crime map* along with other data from all shooting incidents, assaults, and murders. Now the police operations and administrative staff can visualize much more comprehensive firearm crime data; it is laid out before them in one place. They can quickly and easily begin to extract valuable information regarding the relationships between crimes, people, places, guns, and fired ammunition. Just as important as making the readily identifiable connections, is the ability to quickly spot the questionable gaps which, in turn, prompt further inquiry.

Just as in the bridge cable analogy, the three individual programs above make a much stronger gun violence reduction initiative when integrated and woven together. Program integration becomes a prerequisite for taking the presumptive approach because of the amount of information and the diverse nature of the firearm-related information that must be collected and processed.



The steel cable integration analogy extended to various types of CGI

CGI CASE STUDY: Erie, Pennsylvania[25]

To further illustrate how the "Steel Cables" integration analogy extends to various types of CGI, consider this case reported in the media from Erie, Pennsylvania. On June 9, 2016, Erie police officers responded to a report of gunshots being fired in a residential area. The responding officers spotted two suspects fitting the descriptions provided and gave chase on foot.

Only one of the individuals (Suspect 1) was apprehended. Police also recovered two firearms—a .45-caliber pistol and a 9mm pistol—in the immediate area where the two suspects had been spotted. Suspect 1 admitted to possessing the .45-caliber pistol and was charged with its unlawful possession.

Several months later, Suspect 1 pleaded guilty and was sentenced to serve 11-1/2 to 23 months in prison.

Erie detectives dug deeper to learn any additional information about the second firearm. The pistol was swabbed for DNA, processed for latent fingerprints, test-fired, and searched for in ballistics databases for possible connections to evidence collected from other crimes.

Crucial CGI was extracted from the 9mm pistol: a) Forensic testing confirmed the presence of Suspect 1's DNA. b) A latent fingerprint developed on the surface of the pistol was identified as belonging to a second person (Suspect 2). c) The ballistics search conducted by the Pennsylvania State Police linked the pistol to the murder of a young man killed three days before the Erie police recovered it. Suspect 2, was interviewed by detectives about his fingerprint found on the murder weapon. According to the Affidavit of Probable Cause prepared by Erie Police Detective Craig Stoker, Suspect 2 admitted that, on the night of the homicide, he was in a vehicle with three other people when he was handed a loaded gun and was told to fire at a white Cadillac. Suspect 2 said that he fired the gun six to seven times, and, when the vehicle he was in passed the Cadillac, he saw the young male victim slumped over in the driver's seat.

Suspect 2 was charged with criminal homicide and other offenses, and Suspect 1 was charged with new firearm violations related to his unlawful possession of the 9mm pistol, which held his DNA.

25 Tim Hahn, *Gun Recovered in Erie Linked to Another Crime*, GoErie.com, December 19, 2017; Tim Hahn, *Charges Filed in June 2016 Erie Homicide*, GoErie.com, October 27, 2017; Tim Hahn, *Erie Man Faces Trial in Gun Possession Case*, GoErie.com, February 10, 2018.

Recommended Best Practices

Project Safe Neighborhoods (PSN)

PSN is mentioned again here in this chapter because of its relevance and effectiveness at leveraging diverse strengths and coordination up, down, and across multiple jurisdictions.

The following information can be found on the Project Safe Neighborhoods Web site: www.justice.gov/psn

Project Safe Neighborhoods is a nationwide initiative that brings together federal, state, local and tribal law enforcement officials, prosecutors, and community leaders to identify the most pressing violent crime problems in a community and develop comprehensive solutions to address them.

In an effort to reduce violent crime, the Department of Justice has taken steps to strengthen the Project Safe Neighborhoods (PSN) Program and other initiatives. Read the press release and see the corresponding memo to United States Attorneys to learn more.

PSN Strategy

The foundations of the PSN strategy are:

- *Community-Based: Each local program is contoured to fit the specific violent crime problem in that district.*
- *Targeted: Utilizes law enforcement and community intelligence, along with cutting-edge technology, to identify and target the most violent offenders for enforcement action.*
- *Comprehensive: Directs United States Attorneys to marry enforcement efforts with support of prevention and reentry strategies to truly combat violent crime in a lasting way.*

U.S. Attorneys' PSN programs

Every United States Attorney is implementing a PSN program that incorporates these standard features:

- *Leadership by the United States Attorney to convene all partners;*
- *Partnerships at all levels of law enforcement and with the community;*
- *Targeted enforcement efforts that: utilize the full range of available data, methods, and technologies to identify the offenders that are driving violent crime rates in the most violent locations in the district ensure prosecution of those offenders in the federal, state, local, or tribal system – whichever provides the most certain and appropriate sanction;*

- *Prevention of additional violence by prioritizing efforts such as: ensuring public awareness of the violent crime reduction strategy and enforcement results; communicating directly to offenders about the consequences of continuing violent behaviors; supporting locally based prevention and reentry efforts;*
- *Accountability for results based on outcome (reduction in violent crime), not merely output (numbers of investigations or prosecutions).*

In 2018, the Department of Justice reported that it awarded more than $30 million to Project Safe Neighborhoods to combat violent crime. The press release[26] indicated that: "*...the Department is targeting the most violent criminals in the most violent areas, utilizing policing tools that did not exist even a few years ago. Tools like Crime Gun Intelligence Centers (CGIC), which combine intelligence from gunshot detection systems, ballistics, gun tracing, and good old-fashioned police work, help to develop real-time leads on the "traffickers and trigger pullers" who are fueling the violence in their communities. By using modern technologies and cutting-edge police work, the Justice Department is deploying resources strategically to provide the greatest return on our community-based anti-violence efforts."*

ATF Frontline Model[27]

The core of Frontline is Assessment, Investigative/Inspection Accountability, and Measurement—AIM.

Targeted, focused investigations and inspections allow field offices to prioritize their enforcement efforts across the nation in accordance with established strategic goals and plans.

Assessment: Each SAC (Special Agent in Charge) plans his/her field divisions investigative and industry operations activities based on a violent crime assessment. These field commander assessments use data and intelligence to identify violent crime threats within a division's area of responsibility. This information includes emerging criminal trends, significant criminal activity, issues faced by local industry members, the proximity and priorities of Federal, State, local and other external partners. It also assesses available ATF resources, as well as, unique data and intelligence developed from ATF's case management system, ATF's National Tracing System, the National Integrated Ballistic Information Network (NIBIN), the Bomb and Arson Tracking System (BATS), and other intelligence and crime related data available through Federal, State and local

26 Department of Justice, Office of Public Affairs, Press Release Number 18-1286, 10-03-2018. Accessed at: https://www.justice.gov/opa/pr/justice-department-awards-more-30-million-project-safe-neighborhoods-combat-violent-crime on January 21, 2019

27 U.S. Department of Justice, FY2014 - ATF Congressional Budget Submission, retrieved from http://www.justice.gov/jmd/2014justification/pdf/atf-justification.pdf (October 2013).

partners. All of this information is used to identify where and how they can maximize ATF's jurisdiction, authorities and expertise to have a decisive impact in their areas of responsibility. The Frontline model also focuses the ATF industry operations activities. The annual Industry Operations Operating Plan is based on National priorities derived from ATF's Strategic Plan, statutory requirements, and field division-level priorities identified in the assessments. As such, these efforts are intelligence-driven and risk-based to ensure resources are applied how, and where, they have the greatest ability to reduce crime and safeguard the public.

Investigative/Inspection Accountability: Frontline also establishes and reinforces accountability at all levels, by giving a SAC the necessary tools to prioritize and address the specific violent crime threats in their areas, whether the source is (or sources are) violent repeat offenders, gangs or criminal organizations. The determination to open an investigation/inspection is based upon standardized justification statements articulating that the activity is in line with ATFs priorities as identified in the assessments. Case agents and supervisors conduct continuous reviews throughout the life of an investigation to evaluate anticipated outcomes and impacts when weighted against risk and resource utilization.

Measurement: The Frontline Performance Review process is a multi-level mechanism used to evaluate actual performance against divisional violent crime assessments and ATF's Strategic Management Performance Index. Throughout the course of investigations and inspections, first level supervisors monitor progress and performance to ensure resources are being applied effectively and efficiently. At the conclusion of each investigation and inspection, case agents and investigators develop impact statements that include a self-assessment of the goals that were established and review them with their supervisor. Additionally, staff at all levels engage in periodic Performance Review sessions with their peer supervisors, assistant special agents in charge (ASACs) and SACs, who then collaborate to evaluate field-wide performance and provide feedback to the field.

Disrupting the Shooting Cycle: A Best Practices Guide[28]

In its best practices guide, Disrupting the Shooting Cycle, the National Crime Gun Intelligence Governing Board indicated that: *CGI involves the collection and analysis of all information relating to violent gun crime and crime gun recoveries*. Because CGI consists of a *myriad of layered intelligence* from many various programs and sources (e.g., NIBIN, eTrace, DNA, etc.) the guide concluded that *it all must be incorporated into an overall strategy*. More on the guide later in upcoming chapters.

28 *Crime Gun Intelligence Disrupting the Shooting Cycle: A best practices guide for implementing a crime gun intelligence program as part of a comprehensive violent crime strategy.* (2018) https://crimegunintelcenters.org/wp-content/uploads/2018/09/CGI-Manual-Best-Practices-ATF-27-AUG-18.pdf

Boston's Impact Players and Street Shootings Review

In the mid-1990s, the Boston Police Department implemented an initiative called the Boston Gun Project: Operation Ceasefire, upon which many of the tenets of Project Safe Neighborhoods (PSN) were built. It was based on collaborative partnerships, the integration of data from the programs of various law enforcement and criminal justice agencies, and the leveraging of grassroots organizations and the faith community. A key tactic of that project that continues in operation today the: Impact Players and Street Shootings Review (IPSSR). The IPSSR brings together local and state police, prosecutors, and other federal and local agencies every two weeks to share intelligence on the "impact players" involved in drug- and gang-related violence in the city's designated hot spots. IBIS/NIBIN data and firearm trace data are two examples of the important information on which the IPSSR relies.

All information is managed through a central Tactical Intelligence Center that serves as the Boston Regional Intelligence Center (BRIC).

In addition to generating traditional investigative leads, the IPSSR also makes use of suppression tactics, such as imposing costs on offenders related to their chronic offending behavior (e.g., serving warrants, enforcing probation restrictions, deploying federal enforcement powers, and mandatory sentences). The IPSSR has many things in common with COMPSTAT and, as such, has been integrated as an element of the Boston PD COMPSTAT Program. Yet the IPSSR is also unique in that it fosters inter-organizational stakeholder collaboration focused on gang related firearm violence.

CASE STUDY: CARDOZA'S CARTRIDGE

As part of the Boston Gun Project: Operation Ceasefire[29], various stakeholders from local, state, and federal law enforcement and the civilian sector were brought together in a formal and routine manner in order to collaborate on solutions to address the rising levels of gang violence on Boston's streets. The power of the various stakeholders meeting regularly to address a problem not only from their unique perspectives but by thinking and acting together as one is well exemplified in the story of Freddie Cardoza—a man who at one time was regarded by many in Boston's law enforcement community as one of the city's most heinous gang members.

In the mid-1990s the participants at one of the Boston Operation Ceasefire meetings (the forerunner of IPSSR/COMPSTAT) were briefed on an incident in which Boston patrol officers found Cardoza in possession of a single round of ammunition—**one cartridge**.

29 Research Report: *Reducing Gun Violence – The Boston Gun Project's Operation Ceasefire*, September 2001, NCJ 188741.

In discussing the incident at the IPSSR meeting, the various stakeholders learned that by possessing a single cartridge, Cardoza had in fact violated the Federal Firearms laws and would qualify for enhanced mandatory sentencing because of his previous convictions for three or more violent crimes. The group called upon their ATF and U.S. Attorney colleagues to prosecute Cardoza for possession of the single cartridge. Cardoza was prosecuted and convicted. He was sentenced under the armed career criminal enhanced sentencing provision for gun and ammunition possession to a mandatory term of almost 20 years in Federal prison. Despite the fact that a repeat violent offender had been removed from the community for a very long time, the stakeholders believed that more public benefits could and should be gained. They felt strongly that the no-tolerance stance which they had taken on Cardoza should be used as a tactic to deter other young people from committing acts of gang violence.

The working group developed a multi-prong strategy to "send a message" to would-be 'gangsters' that violence would not be tolerated in Boston. Posters, like the one below, were created and displayed throughout the city in areas where gangs frequently operated. Gang members were also brought in to face a panel of Operation Ceasefire stakeholders and hear firsthand just what the police and the courts had in store for armed gang members. Below is an excerpt from the Operation Ceasefire report:

> *. . . The room became more silent when the panel turned to Freddie Cardoza, who was featured on his own poster and handout. "One bullet," [said Gary French]. "We are not putting up with this stuff anymore." . . .*

FREDDY CARDOZA

PROBLEM: VIOLENT GANG MEMBER

"Given his extensive criminal record,
if there was a Federal law against
jaywalking we'd indict him for that."
--Don Stern, US attorney

SOLUTION: ARMED CAREER
CRIMINCAL CONVICTION

Arrested with one bullet
Sentence: 19 years, 7 months
No possibility of parole

ADDRESS:

OTTISVILLE FEDERAL
CORRECTIONAL INSTITUTE
Maximum Security Facility, New York

Integrating Sound, Smell, and Sight

Some cities have programs which utilize acoustics technology to pinpoint the sound of gun fire and immediately dispatch police officers to the scene. Others employ K-9 teams to sniff out firearms and fired evidence. Still others rely upon automated ballistics technology systems like IBIS to electronically see and compare marks on fired bullets and cartridge cases to help link crimes, guns and suspects. Some cities utilize all three which is certainly a good practice. The question is: Is it done in such a manner as to make it a "best practice".

Boston Police and Agents from the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) have teamed up to integrate three programs involving sound, smell and sight. Simply put, it works like this: When a gun is fired in certain areas of Boston, ShotSpotter acoustic detection sensors help to "spot the shot" and notify police who dispatch patrol officers to the scene. An ATF sponsored K-9 Team shows up and the dog begins to sniff out the evidence left behind, such as firearms and fired ammunition components.

Should the K-9 Teams find guns, fired bullets or cartridge cases they are processed through IBIS at Boston PD where digital images of the critical identifying marks are viewed, preserved and searched against the National Integrated Ballistic Information Network (NIBIN)—another ATF program in which the Boston PD is an active partner.

Critical Elements

- Integrate information from the relevant crime programs (e.g., organized anti-gang initiatives, crime gun tracing, geo-crime mapping, and gunshot acoustic detectors), ALPR data, security camera data, and forensic data such as ballistics, DNA, and fingerprints.
- Leverage inputs, outputs, and outcomes of relevant crime programs.
- Effectively process program output data for both tactical and strategic uses.
- Eliminate silos and stovepipes.
- Communicate clearly and often.

Key Considerations

- Ensure a continuous communication process with affected stakeholders—up, down, and across their various organizations.

Summary

The Most Important Thing
Integrate programs as a prerequisite for taking the presumptive approach, because of the diverse groups of people involved, programs that are already in place, the quantity and nature of the firearm crime related data to be collected, and the various methods used to process the data.

The Next Step
Institutionalization of the presumptive approach requires training and enforced directives. The next chapter discusses the fundamentals of task number three of *The 13 Critical Tasks*—Establishing a Formal Understanding and Reinforcing Directives.

TASK 3

Establishing a Formal Understanding and Reinforcing Directives

Why is policy important?

In June of 2013, WKYC-TV in Cleveland televised an investigative report about the amount of data submitted to the National Integrated Ballistic Information Network (NIBIN) by the police agencies in that region—or rather the **lack** of it.

When properly managed, programs like NIBIN help police be more effective at identifying and stopping armed criminals.

NIBIN only works when law enforcement feeds it. That is, when ballistics evidence collected from all crime scenes and test-fires discharged from all guns taken into police custody, pursuant to an investigation of criminal wrong doing, are submitted for NIBIN processing.

This is what reporter Tom Meyer and producer Rick Hepp of Channel 3 were trying to get a handle on when they spent months poring over the logs of firearm-related evidence of a number of police agencies on Northeastern Ohio.

The news team found that the larger cities like Cleveland, Lorain, Akron, Canton and Painesville tend to use the NIBIN database more routinely. But the investigation also learned that many surrounding departments only submit a small percentage of the guns they seize for NIBIN processing.

"Every society gets the kind of criminal it deserves – every community gets the kind of law enforcement it insists on." - Robert F. Kennedy

The cry for justice came through loud and clear in the Channel 3 piece when Tara Price, who lost a son to gun violence, said: *"Why wouldn't you be using the system? You have a system that you could use. And it's a possibility that you might get a hit."* She expressed frustration that the person who killed her son, Sherwon Wanzo, has yet to be identified. She said: *"So, I'm very upset. I'm very disappointed"*.

The news piece also featured Ohio Attorney General Mike DeWine. As to NIBIN he said: *"It is a great tool... It is, candidly, an under-utilized tool."*

DeWine told the news team that he will make it a priority to make sure that police forces know about NIBIN and use it for every gun. He said: *"I will guarantee you we will solve hundreds and hundreds of more crimes,"* said DeWine. *"We will get criminals of the streets and we will ultimately save lives."*

In other words, what DeWine was proposing is that the successful use of NIBIN, and any crime solving tool like ATF's eTrace for that matter, is really a matter of ***policy***—that is, putting ***policies*** in place, and using them routinely.

Today, most people can't imagine getting in their cars and *not* buckling their seat belts.

It wasn't always that way. When the concept of seat belts was first introduced there was much debate, pro and con. I had heard all the arguments *against* them but I also knew that they were intended to save lives.

The engineers who first designed seat belts and the automobile makers who put them in their cars had no power to get people to wear them—it took policy makers putting hard and fast measures in place to make it happen (not discounting those irritating bells and buzzers).

Today, it is common to hear continued calls for new ways of getting armed criminals off the streets and saving lives from acts of gun violence. In one weekend alone in Chicago five were killed and twenty more wounded by armed criminals while halfway around the world in Nairobi, cold and calculated killers crossed an international border to shoot hundreds including the elderly, women and children at a shopping mall.

When armed criminals hurt people everyone seems to agree that they should be tracked down and punished. There are methods and tools that are applied across the criminal justice system by police, forensic experts, prosecutors and others to do this.

Not unlike our experience with seat belts. Some choose to use the available crime solving tools and methods routinely while others choose not to.

When we fail to make use of our crime solving tools we allow killers to remain free, roaming our streets for longer periods of time. This puts more lives at risk—just like when we fail to fasten our seat belts.

Remember – it took policy to get us to buckle up!

In the attempt to find a solution to the gun crime issue today, there is a growing movement to make the investigation of gun crimes and the enforcement of the gun laws on the books more effective as a matter of enforceable **policy** as well. In March of 2008, then New Jersey Attorney General Anne Milgram launched an historic partnership with the federal Bureau of Alcohol, Tobacco, Firearms and Explosives with the issuance of a new law enforcement directive[30] that orders all local police departments to input data on guns used in the commission of a crime to the New Jersey State Police and ATF. The directive mandated that: 1) agencies trace the transactional history of recovered firearms through ATF's eTrace and the NJ Trace system, 2) that local police departments promptly query the National Crime Information Center (NCIC) system to determine whether a weapon has been stolen, and 3) that ballistics testing be done "as expeditiously as possible" and results submitted to the National Integrated Ballistic Information Network (NIBIN) to determine whether the weapon is related to any other criminal episode. "These technological advances are all important tools in our fight against crime," Milgram said.

30 NJ Attorney General directive No. 2008-1, *Submission and Analysis of Information Relating to Seized and Recovered Firearms*. March 17, 2008. Accessed on January 24, 2019 at https://www.nj.gov/oag/newsreleases08/dir20080318.pdf

In September of 2013, the Governor of New Jersey signed bill A3797 into public law (P.L. 2013, Chapter 162, reproduced later in this chapter). It requires:

> *"New Jersey law enforcement agencies to use the National Crime Information Center System (NCIC) to determine whether a firearm has been reported stolen; the ATF eTrace System to establish the identity of a firearm's first purchaser and the National Integrated Ballistics Identification Network (NIBIN) to ascertain whether a particular firearm is related to any other criminal event or person."*

In a letter that he sent to the legislature, Governor Christie stated that

> *"Codifying our existing law enforcement regulations is sensible, and ensures that all State and local officials follow a single set of practices. I am pleased to be able to add this valuable resource to our ongoing fight against the criminal use of firearms, and the dangers to our families and communities by those who scornfully abuse our right to bear arms."*

New Jersey is on the right track and so is the *International Association of Chiefs of Police* (IACP). In October of 2012, the IACP adopted a Resolution entitled: **Regional Crime Gun Processing Protocols, number FC.028.a12.31**

The resolution views regionally applied crime gun and evidence processing protocols as a best practice for the investigation of firearm-related crimes. It encourages law enforcement officials, prosecuting attorneys and forensic experts to collaborate on the design of mutually agreeable protocols best suited for their region and it specifically identifies NCIC, eTrace and NIBIN as areas to be addressed.

In July of 2018, the IACP reinforced the tenets of its 2012 Crime Gun Processing Protocol resolution and published its Model Policy for Firearm Recovery. The IACP's introduction states that: "*With violence involving firearms dominating the news headlines, it is crucial that all law enforcement agencies have timely and sustainable protocols for the recovery and forensic processing of all firearms and firearm-related evidence*". The Model Policy covers the initial recovery of firearms and fired evidence including the collection, handling, transportation, interviews and scene documentation, and highly-recommended forensic tests and database queries, such as NCIC, eTrace, and NIBIN. The Model Policy is accessible to all IACP members through the Policy Center's on-line resources at: www.theiacp.org/resources/policy-center-resource/firearm-recovery.

31 IACP Resolution, *Regional Crime Gun Processing Protocols*, No. FC.028.a12. Accessed on January 24, 2019 at https://www.theiacp.org/resources/resolution/regional-crime-gun-processing-protocols

In November of 2018, the IACP adopted Resolution number FC.07.t2018, entitled *Support for Development of Comprehensive Crime Gun Intelligence Strategies*[32] which had been submitted through its Firearms Committee. The resolution encourages all law enforcement agencies to establish protocols that ensure that recovered firearms and ballistic related evidence are appropriately subjected to eTrace, NCIC, NIBIN, DNA swabbing and latent fingerprint and trace evidence examinations. Notably, the resolution supports the creation of Comprehensive Crime Gun Intelligence Strategies urging all agencies to review the ATF National Crime Gun Intelligence Governing Board (NCGIGB) publication entitled: *Crime Gun Intelligence Disrupting the Shooting Cycle: A best practices guide for implementing a crime gun intelligence program as part of a comprehensive violent crime strategy*[33] when considering the establishment of such strategies to better support firearm-related criminal investigations.

In 2019, INTERPOL adopted its *Firearms Recovery Protocol* and posted it on its Web site[34] as part of its Firearms Program. It is a suggested guide for investigating firearm-related crimes and gun trafficking. The Protocol is summarized by INTERPOL as follows:

> *"The Protocol suggests that the recovery is just the beginning. Through suspect and other associated interviews, laboratory examinations and database queries such as* ***the INTERPOL Illicit Arms Records and tracing Management System (iARMS) and the INTERPOL Ballistic Information Network (IBIN),*** *a comprehensive view of firearms trafficking may steer investigators to target the true source of the firearms that are recovered in one's country. With the assistance of the protocol, investigators and intelligence units can collect and analyse more effectively the intelligence that can be obtained from inside and outside the weapon. Coordinating this intelligence may prove crucial* ***to preventing terrorism, and solving firearms trafficking and other related violent crimes.***"

32 IACP Resolution No. FC.07.t2018. *Support for Development of Comprehensive Crime Gun Intelligence Strategies.* 2018. Accessed at www.theiacp.org/sites/default/files/View%20the%20recently%20adopted%202018%20Resolutions.pdf on January 24, 2019

33 National Crime Gun Intelligence Governing Board's (NCGIGB) publication entitled: *Crime Gun Intelligence Disrupting the Shooting Cycle: A best practices guide for implementing a crime gun intelligence program as part of a comprehensive violent crime strategy. 2018*. Accessed at https://crimegunintelcenters.org/wp-content/uploads/2018/09/CGI-Manual-Best-Practices-ATF-27-AUG-18.pdf on January 24, 2019

34 *The INTERPOL Firearms Recovery Protocol*, Lyon, retrieved from https://www.interpol.int/en/content/download/8121/file/Firearms%20recovery%20protocol_2019_EN_LR.pdf , July, 3, 2019.

Why establish a formal understanding and reinforce directives?

Violent crime is a people issue, as are the causes and solutions. That is, violent crimes are committed by people and the programs intended to address these crimes must be designed and implemented by people. These programs can be very complicated and require communication, understanding, collaboration, and strict adherence to certain procedures. Because of the nature and quantity of the data and the many people involved in the crime solving process, the institutionalization of the presumptive approach requires **a formalized understanding and reinforcement of the directives**.

This formalized understanding of the roles and responsibilities of the participants and what the program entails is required in order to effectively communicate it through various means and media. A formalized understanding will also help ensure program continuity, as responsible parties routinely come and go and their roles change for various reasons.

The documentation of a program and a directive signed by senior agency executives provide a number of substantial and sustainable benefits. Together they:

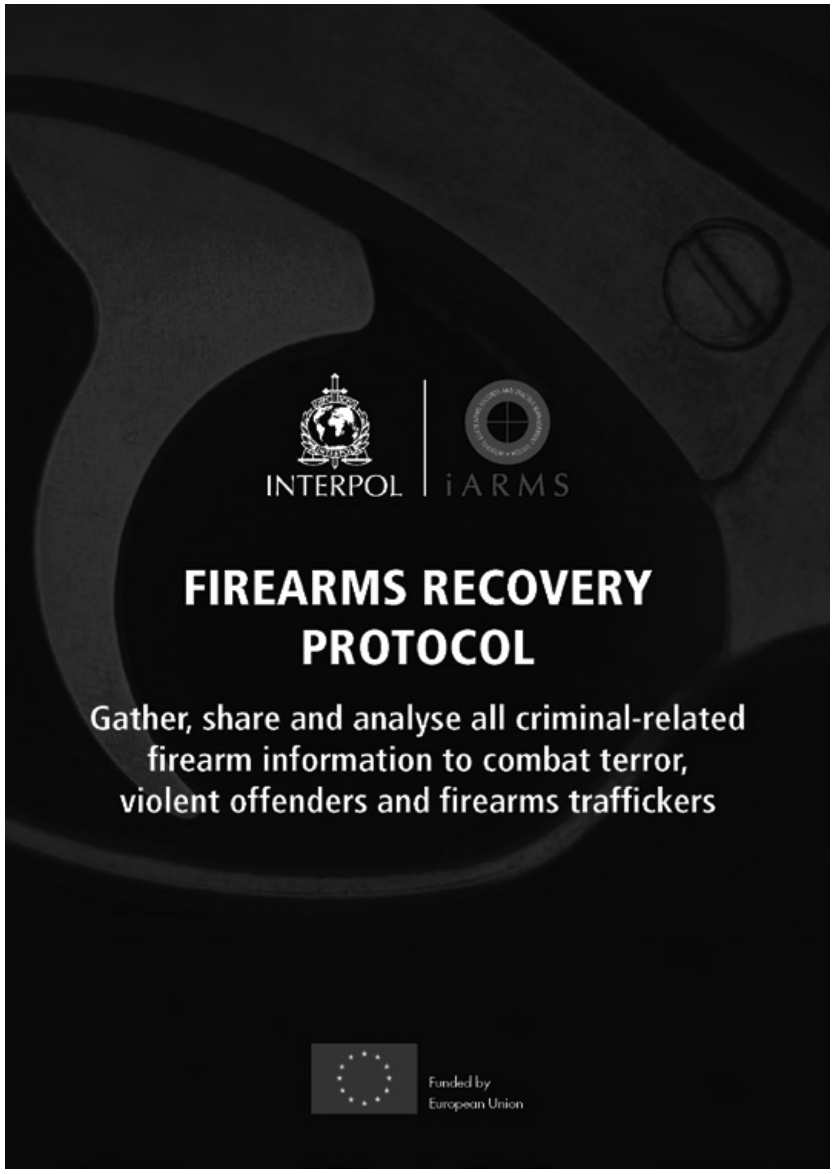
- Communicate the commitment of the agency to personnel at all levels and empower them to act.
- Provide for program continuity, regardless of personnel changes.
- Communicate the vision, mission, strategies, and tactics in a consistent manner.
- Define the roles and expectations for each participant.
- Establish protocols and procedures.
- Provide for performance measurement and the ability to adjust tactics and adapt to change.

A *Memorandum of Understanding* (MOU) signed by stakeholder agency executives can provide similar benefits between organizations.

Reinforcement of the program directives is also required in order to ensure the efficiency and effectiveness of ongoing operations in achieving their intended objectives. This reinforcement should be positive and supportive on the front end and should hold managers accountable for everyone doing their part on the back end.

Recommended Best Practices

INTERPOL Firearms Recovery Protocol



INTERPOL

FIREARMS RECOVERY PROTOCOL
INTERPOL Firearms Programme

INTERPOL's Firearms Programme focuses on the interception, tracing and ballistic comparison of illicit firearms material as key components of the fight against terrorism through the preventive dismantling of firearms trafficking and violent criminal organizations across international borders. **To this end, quality data inputting into our databases as part of this Protocol for all crime guns recovered in your jurisdiction is of primary importance.**

Only then will INTERPOL's Firearms Programme fully benefit you through proper gathering, sharing, and analysis of both the firearm and ballistic-related intelligence, leading to further arrests and convictions of firearms traffickers. **We can work together to break the firearms supply to terrorist groups and violent individuals.**

INTERPOL

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Firearms Recovery Protocol

LAW ENFORCEMENT WORK
Step 1: National firearms registry search and lost/stolen database search
Step 2: iARMS Search/Trace (international search of lost, stolen, and trafficked/smuggled firearms)
Step 3: Evidence Recovery and Suspect Interview

FORENSIC LABORATORY WORK
Step 4-5: Latent fingerprint examination of firearm (in close coordination with DNA experts)
Step 4-5: DNA examination of firearm (in close coordination with fingerprint experts)
Step 6: National and/or International IBIN ballistic comparison of cartridge casings / bullets

COORDINATION
Step 7: Gather the data collected from Steps 1 to 6 to develop investigative leads
Step 8: Provide the investigators with the immediately known intelligence
Step 9: Analyze the intelligence generated for indicators of firearms trafficking

INTERPOL's Firearms Programme has developed the Firearms Recovery Protocol as a suggested guide into uncovering firearms trafficking. Traditionally, investigations ended with the seizure of the firearm. The Protocol suggests that the recovery is just the beginning. Through suspect and other associated interviews, laboratory examinations and database queries such as **the INTERPOL Illicit Arms Records and tracing Management System (iARMS)** and **the INTERPOL Ballistic Information Network (IBIN),** a comprehensive view of firearms trafficking may steer investigators to target the true source of the firearms that are recovered in one's country. With the assistance of the protocol, investigators and intelligence units can collect and analyse more effectively the intelligence that can be obtained from inside and outside the weapon. Coordinating this intelligence may prove crucial **to preventing terrorism, and solving firearms trafficking and other related violent crimes.**

From the outside of the gun comes identifying data in the form of make, model, calibre and serial number that can be used to identify the firearm's stolen or lost status, and track its transaction history (e.g. iARMS), plus latent fingerprints (e.g. AFIS Gateway), and DNA (e.g. DNA Gateway). The suspect may provide valuable leads as well when asked the proper questions to ascertain trafficking. These INTERPOL systems can help answering the question: *Who has had contact with this firearm?*

From the inside of the gun comes ballistics data in the form of unique markings left on fired ammunition and cartridges by the internal working parts of a gun, which can be used to link crimes, guns, and suspects across widely separated geographical boundaries (e.g. IBIN). It can help answering the question: *In what crimes has this gun been used?*

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The combined analysis of database queries, laboratory examinations and suspect and other interviews is likely to significantly increase the ability of law enforcement agencies to prevent and combat firearm-related crimes, particularly through the identification of firearms traffickers and other criminals.

1. LAW ENFORCEMENT WORK

INTERPOL suggests there may be a need to refocus our ideas of firearms investigations: the primary goal of a firearms investigation is to identify and prosecute the trafficker, the true source of your city's or country's illegal firearms problem. To this end, the Firearms Programme has developed this Firearms Recovery Protocol in order to provide guidance to law enforcement authorities when finding or recovering a firearm or expended ammunition cartridge. **The Protocol has both a law enforcement and forensics components with the ultimate goal of both parties sharing information to solve firearms trafficking.**

1.1 Step 1: National firearms registry search and lost/stolen database search (if your country has such a domestic database)

Valuable intelligence and investigative leads can be developed in this step to ascertain the firearms trafficking problem in your city or country and prosecute offenders. Initial investigative interviews can be identified and should be followed-up with any positive hits to these searches.

1.2 Step 2: iARMS Search/Trace (international search of lost, stolen, and trafficked /smuggled firearms)

✓ **For proper firearms identification and in order to ensure success in queries and traces, please refer to the INTERPOL Firearms Reference Table (IFRT) accessible via the iARMS database**

INTERPOL member countries with access to iARMS may record firearms whose location is unknown and report them as "stolen", "lost", or "trafficked/smuggled".

In the course of a police intervention in any INTERPOL member country, firearms may be found or seized for which no valid license is produced or which cannot be found in national databases. Law enforcement services may then query iARMS in order to ascertain if the firearm was reported internationally as lost, stolen, or trafficked/smuggled.

Should the search trigger a hit result, the source of data on that particular firearm, the user country and the INTERPOL General Secretariat receive a notification. Further cooperation can subsequently ensue between the two INTERPOL member countries and can be facilitated by the General Secretariat.

If iARMS search is negative then the trace is begun
Should the firearm not be found in iARMS, the member country conducting the investigation has the option of sending specific firearm trace requests to any other INTERPOL members it

designates through iARMS in order to obtain additional information on the firearm in its possession, such as purchaser information.
Any of the member countries contacted through a trace request may respond providing additional information on that firearm. The trace response form consists of a free-text box where the requested member country may enter any data it wishes to enter in relation to the firearm.

Valuable intelligence and investigative leads can be developed in this step to ascertain the firearms trafficking problem in your city or country and prosecute offenders. Once you have recovered, queried and received a positive match on a firearm, consider asking the country for information surrounding the report of the firearm as "stolen", "lost", or "trafficked/smuggled". This information could include an interview of person(s) involved or follow-up police reports. The key is to determine the movement of the firearm.

✓ **For further information regarding iARMS, please refer to the Firearms Programme Presentation available on our website**

1.3 Step 3: Evidence Recovery and Suspect Interview

Evidence Recovery:

- The recovery of the firearm is important for recording the serial number and other identifying information for database searches and tracing. All recovered expended cartridge casings and bullets should be collected at crime scenes as well for entry into the ballistic comparison database. This includes recoveries any time police report to a scene where shots were fired and no firearm was recovered. Also, all recovered firearms should be test-fired and the expended cartridge casings and bullets submitted for entry into the ballistic comparison database.

Conduct interviews with all suspects and witnesses in relation to the firearms recovery:

- **Where did they get the firearm (specific location)?**
- **From whom (provide physical description)? Do they have contact information of this person?**
- **How much did they spend or trade?**
- **Were other firearms available?**

Also, by finding more people to interview, you increase your chances of developing investigative leads on who are the violent offenders and/or traffickers.

Valuable intelligence and investigative leads can be developed in this step to ascertain the firearms trafficking problem in your city or country and prosecute offenders. Follow-up on any lead is necessary.

✓ **For further information regarding the Suspect Interview, please refer to the Suggested Interview Questions Document available on our website**

2. FORENSIC LABORATORY WORK

Examination of all samples – How to preserve the firearm-related evidence?

Many forensic laboratories choose to conduct fingerprint and DNA examinations to identify victims and perpetrators, and possibly link these perpetrators to other firearms that have been used in previous crimes

If conducting fingerprint and DNA analysis prior to ballistic comparitosn, the order between fingerprints and DNA depends on the case circomstances and needs to be coordinated between the forensic departments.

There is no strict, pre-determined order between those two forensic disciplines, but instead the investigator needs to be aware of the possibility of both and needs to talk to the laboratory in order to determine which evidence to collect and in which order.

As well, ensure that you protect handguns from fingerprint and DNA contamination by employing proper crime scene evidence collection techniques. For instance, only touch firearms with fresh disposable gloves, use clean packaging material, and DNA-free fuming chambers for fingerprint examination (do not re-use agents for multiple cases).

2.1 Step 4-5: Latent fingerprint examination of the firearm

To allow a good processing of the firearm for latent fingerprints, the gun must be handled only by the grip or non-smooth surfaces since latent prints develop easier on smooth surfaces, most notably of the barrel, the magazine or the ammunition. Latent fingerprints can also be found on the bullets or cartridges if they have been dropped into the barrel.

2.2 Step 4-5: DNA examination of the firearm

Firearms and related evidence may also be processed for DNA (especially those recovered not from a specific person, but for example from a crime scene); possible serial number restoration can be done afterwards.

Through the screening of firearms evidence for traces of contact (e.g. blood or skin cells), DNA analysis has the potential to help establish a link between a possible perpetrator and a gun or a link between a victim and a gun. Suitable areas for sample collection are gun grip, trigger, cylinder or gun slide, hammer, magazine release and/or magazine (floorplate and top of magazine) as well as, to a limited extent, cartridges or spent cartridge cases.

Cross check with different databases
Use national databases, INTERPOL (**e.g. The INTERPOL DNA & AFIS Gateways**) and other capabilities.

Valuable intelligence and investigative leads can be developed in this step to ascertain the firearms trafficking problem in your city or country and prosecute offenders.

2.3 Step 6: Ballistic comparison of cartridge casings / bullets to link crime scenes /IBIN

Along with the other steps in a crime gun recovery methodology such as registry searches, fingerprint and DNA examinations, ballistics comparison is a key component of a trafficking investigation. To maximize the opportunity for investigative leads, it is recommended that investigators should insist and laboratory professionals conduct ballistic examinations on all recovered firearms and cartridge casings. Often a firearm recovered from a minor offense can be linked to a major crime like homicide by ballistic comparison. If firearms recovered from these "minor" offenses are not compared, valuable investigative leads will be lost.

Just as fingerprint data links crimes and criminals across international borders, the international sharing of ballistics information permits the connection of evidence and crime scenes. Every firearm leaves unique microscopic markings on the surface areas of fired bullets and cartridge cases. Technology enables us to read and catalogue this microscopic evidence through the capturing of high-resolution ballistics images, which can be shared and compared rapidly to ballistics exhibits in multiple jurisdictions, countries.

For all cartridge cases and bullets recovered and submitted to the laboratory, a national database cross-search should be performed automatically.

International IBIN searches are performed in order to determine if the same firearm was used across borders. Hence, searches have to be conducted against strategically selected IBIN members. The choice of targeted countries can be facilitated by law enforcement officers willing to share valuable information regarding the firearm and its possessor to their national laboratory. It is worth noting that computer-assisted searches can only be confirmed by laboratory professionals.

These examinations are designed to provide investigative leads by linking multiple crimes and crime scenes to recovered weapons. In high-profile international cases, all INTERPOL member countries can benefit from the IBIN's reservoir and cross compare ballistics data with IBIN Members using test-fires or resin replicas of the cartridge cases.

✓ **For conducting efficient IBIN Searches, please refer to the IBIN Search Protocol available on our website**

Ballistics data shared via IBIN has already revealed links between gun-related crimes in different countries, providing valuable investigative leads for police.

✓ **For further information regarding IBIN, please refer to the Firearms Programme Presentation available on our website**

3. COORDINATION

3.1 Step 7: Gather the data collected from Steps 1 to 6 to develop investigative leads

The comprehensive data for all recoveries must be gathered into a central location such as an intelligence unit or a national firearms focal point.

As noted above, the intelligence will be generated from the conducted:

- **Database queries, including iARMS Search/Trace;**
- **Laboratory examinations, including ballistic comparison of cartridge casings / bullets, and the use of IBIN, when applicable; and**
- **Interviews of all persons associated with the recovered firearm(s).**

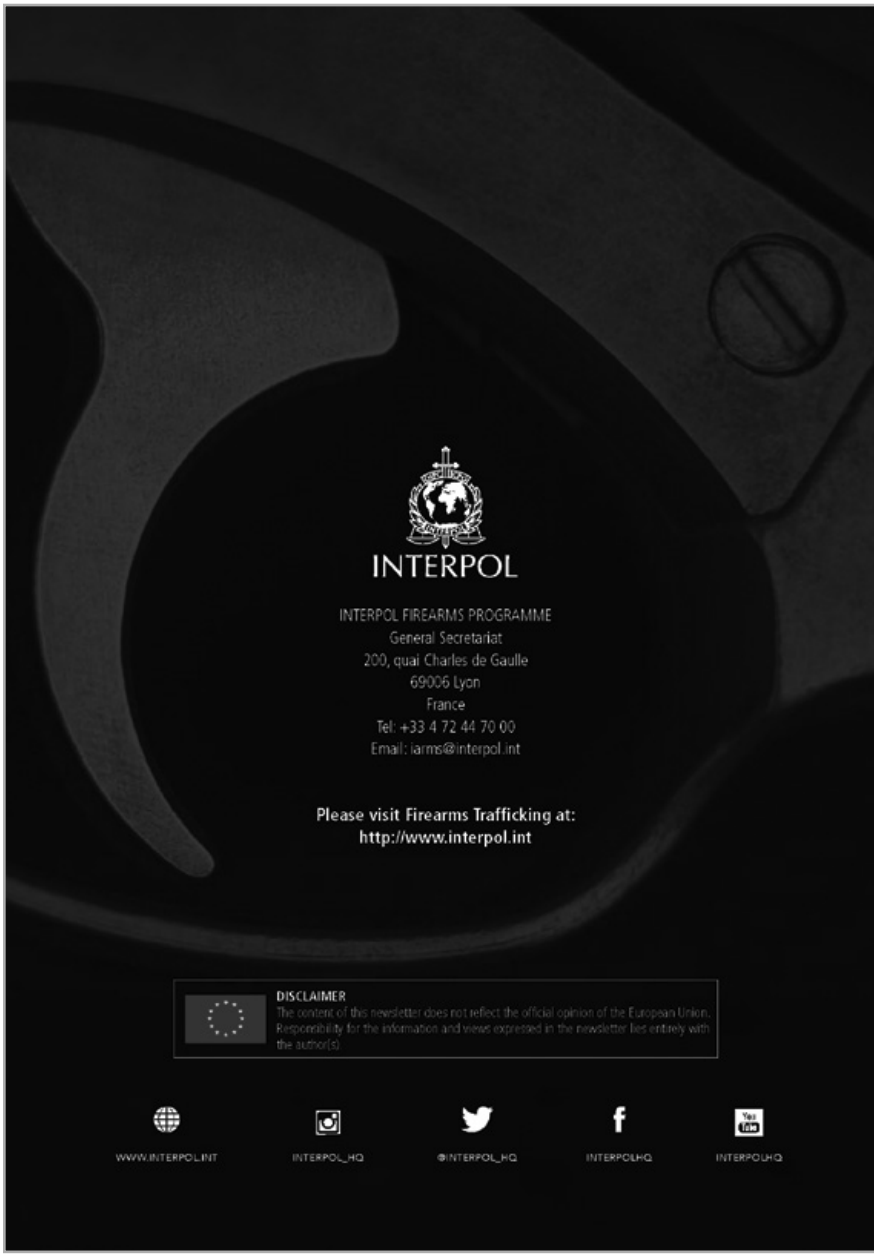
3.2 Step 8: Provide the investigators with the immediately known intelligence

Immediately known investigative leads should be provided to the investigators who initially submitted the recovered firearm(s). These leads may help solve international crimes and provide support to the investigators in identifying traffickers.

3.3 Step 9: Analyse the intelligence generated for indicators of firearms trafficking

The intelligence collected from a recovery should be analysed, but also compared to all firearms recoveries in order to look for common traits with respect to the indicators of firearms trafficking. The indicators may lead to a specific person or region as the source. The primary goal of a firearms investigation remains to identify and prosecute the trafficker, the true source of your city's or country's illegal firearms problem. This intelligence should be shared with the investigative team that will target firearms traffickers.

✓ **For further information regarding indicators of firearms trafficking, please refer to the Firearms Trafficking Indicators Document available on our website**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Creating a Firearms Evidence Database

The following pages outline a law the state of Connecticut created in order to create a firearm evidence data bank.

CONNECTICUT GENERAL STATUTES
TITLE 29 PUBLIC SAFETY AND STATE POLICE
CHAPTER 529 DIVISION OF STATE POLICE

Sec. 29-7h. Firearms evidence databank. (a) As used in this section:
(1) "Firearms evidence databank" means a computer-based system that scans a test-fire and stores an image of such test-fire in a manner suitable for retrieval and comparison to other test-fires and to other evidence in a case;

(2) "Handgun" means any firearm capable of firing rim-fire or center-fire ammunition and designed or built to be fired with one hand;

(3) "Laboratory" means the Division of Scientific Services forensic science laboratory within the Department of Public Safety;

(4) "Police department" means the Division of State Police within the Department of Public Safety or an organized local police department;

(5) "Test-fire" means discharged ammunition consisting of a cartridge case or a bullet or a fragment thereof, collected after a handgun is fired and containing sufficient microscopical characteristics to compare to other discharged ammunition or to determine the handgun from which the ammunition was fired.

(b) (1) The Division of Scientific Services shall establish a firearms evidence databank. Test-fire evidence submitted to the laboratory or collected from handguns submitted to the laboratory shall be entered into such databank in accordance with specific procedures adopted by the Commissioner of Public Safety, in the regulations adopted pursuant to subsection (f) of this section.

(2) The firearms evidence databank may be used by laboratory personnel to (A) compare two or more cartridge cases, bullets or other projectiles submitted to the laboratory or produced at the laboratory from a handgun, or (B) upon the request of a police department as part of a criminal case investigation, verify by microscopic examination any resulting match, and shall produce a report stating the results of such a search.

(3) Any image of a cartridge case, bullet or fragment thereof that is not matched by a search of the databank shall be stored in the databank for future searches.

(4) The Division of Scientific Services may permit a firearms section of a police department that complies with all laboratory guidelines and regulations adopted by the commissioner pursuant to subsection (f) of this section regarding the operation of the firearms evidence databank to (A) collect test-fires from handguns that come into the custody of the police department, (B) set up a remote terminal to enter test-fire images directly into the databank, and (C) search the databank.

(c) (1) Except as provided in subdivision (4) of subsection (b) of this section and subsection (d) of this section, a police department shall submit to the laboratory any handgun that comes into police custody as the result of a criminal investigation, as found property, or for destruction, prior to the return or the destruction of the handgun.

(2) The laboratory shall collect a test-fire from each submitted handgun within sixty days of submission. The laboratory shall label the test-fire with the handgun manufacturer, type of weapon, serial number, date of the test-fire and name of the person collecting the test-fire.

(d) (1) A police department shall collect a test-fire from every handgun issued by that department to an employee not later than six months after October 1, 2001. On and after October 1, 2001, a police department shall collect a test-fire from every handgun to be issued by that department before the handgun is so issued. Any police department may request the assistance of the Division of State Police or the laboratory to collect a test-fire.

(2) The police department shall seal the test-fire in a tamper-evident manner and label the package with the handgun manufacturer, handgun type, serial number and the name of the person collecting the test-fire. The police department shall submit the test-fire and two intact cartridges of the same type of ammunition used for the test-fire to the laboratory.

(e) The laboratory may share the information in the firearms evidence databank with other law enforcement agencies, both within and outside the state, and may participate in a national firearms evidence databank program.

(f) The commissioner shall adopt regulations, in accordance with the provisions of chapter 54, to carry out the purposes of this section.

New Jersey Public Law 2013, CHAPTER 162

§§1,3 -
C.52:17B-9.18 &
52:17B-9.19
§4 - Note

P.L.2013, CHAPTER 162, ***approved September 18, 2013***
Assembly, No. 3797 ***(Third Reprint)***

AN ACT concerning [2][certain seized and recovered] the reporting of information relating to certain[2] firearms [2][and] ,[2] supplementing [3]Title 52 of the Revised Statutes.[3] [2][Title 52 of the Revised Statutes] and amending P.L.1966, c.37[2].

BE IT ENACTED *by the Senate and General Assembly of the State of New Jersey:*

1. [2](New section)[2] The Legislature finds and declares that to further provide for the public safety and the well being of the citizens of this State, and to respond to growing dangers and threats of gun violence, it is altogether fitting and proper for the law enforcement departments and agencies of this State to fully participate, through the utilization of electronic technology, in interjurisdictional information and analysis sharing programs and systems to deter and solve gun crimes.

To effectuate this objective, it shall be the policy of this State for its various law enforcement agencies to utilize fully the federal Criminal Justice Information System to transmit and receive information relating to the seizure and recovery of firearms by law enforcement, in particular the National Crime Information Center System to determine whether a firearm has been reported stolen; the Alcohol, Tobacco, Firearms, and Explosives E-Trace System to establish the identity of a firearm's first purchaser, where that firearm was purchased and when it was purchased; and the National Integrated Ballistics Identification Network to ascertain whether a particular firearm is related to any other criminal event or person.

[2][2. Whenever a law enforcement agency seizes or recovers any firearm, the agency shall promptly enter the make, model, caliber, and serial number of that firearm into the National Crime Information Center 2000 System to determine whether that firearm was reported stolen.][2]

EXPLANATION – Matter enclosed in bold-faced brackets [thus] in the above bill is not enacted and is intended to be omitted in the law.

Matter underlined thus is new matter.
Matter enclosed in superscript numerals has been adopted as follows:
[1]Assembly ALP committee amendments adopted February 14, 2013.
[2]Senate SLP committee amendments adopted May 9, 2013.
[3]Assembly amendments adopted in accordance with Governor's recommendations September 9, 2013.

[2]2. Section 3 of P.L.1966, c.37 (C.52:17B-5.3) is amended to read as follows:

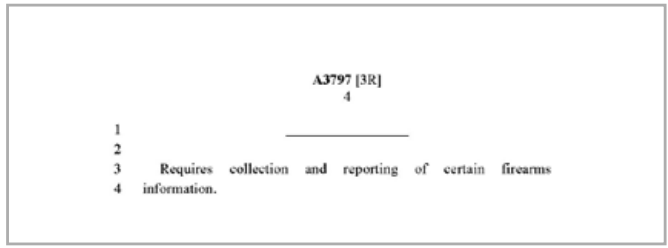
3. a. All local and county police authorities shall submit a quarterly report to the Attorney General, on forms prescribed by the Attorney General, which report shall contain the number and nature of offenses committed within their respective jurisdictions, the disposition of such matters, information relating to criminal street gang activities within their respective jurisdictions, information relating to any offense directed against a person or group, or their property, by reason of their race, color, religion, gender, disability, sexual orientation, gender identity or expression, national origin, or ethnicity and such other information as the Attorney General may require, respecting information relating to the cause and prevention of crime, recidivism, the rehabilitation of criminals and the proper administration of criminal justice.

b. A law enforcement officer who responds to an offense involving criminal street gang activity shall complete a gang related incident offense report on a form prescribed by the Superintendent of State Police. All information contained in the gang related incident offense report shall be forwarded to the Superintendent of State Police for inclusion in the Uniform Crime Report.

c. A law enforcement officer who seizes or recovers a firearm that was unlawfully possessed, used for an unlawful purpose, recovered from a crime scene or is reasonably believed to have been used in or associated with the commission of a crime, or is otherwise acquired as an abandoned or discarded firearm shall complete, within 24 hours of the entering of the required information relating to that firearm into the New Jersey Trace System and such other State and federal database systems as prescribed by the superintendent, a seized or recovered firearms incident report on a form prescribed by the superintendent. The incident report shall be filed with the State Police in a manner and time prescribed by the superintendent.[2]

(cf: P.L.2010, c.110, s.1)

[2][3. Whenever a law enforcement agency seizes or recovers a firearm that was unlawfully possessed, used for an unlawful purpose, recovered from the scene of a crime, is reasonably believed to have been used or associated with the commission of a crime, or is acquired by the agency as an abandoned or discarded firearm, the agency shall, as soon as may be practicable, but in no case more than 24 hours after the agency has taken possession of the firearm, enter the appropriate information relating to that firearm into the New Jersey Trace System which, as part of the federal Criminal Justice Information System, makes information relating to that firearm's first purchaser and where and when it was purchased, available to all law enforcement agencies.]2



A3797 [3R]
4

Requires collection and reporting of certain firearms information.

Philippines: Mandatory Testing of Firearms and Firearm Evidence

In April of 2011, the Philippines began requiring all police to submit evidence to the Philippine National Police Crime Laboratory. This move not only helps police cross-reference evidence from multiple crime scenes, but will help build the country's ballistic database. Testing of firearms and slugs is now a must:

> *"Firearms, cartridges and slugs seized, captured or recovered from the crime scene and any other police operations are required to be submitted to the Philippine National Police Crime Laboratory for speedy resolution of crimes, even those that happened years ago.*
>
> *PNP Directorate for Investigation and Detective Management Director Arturo G. Cacdac, Jr. said the firearms, cartridges and slugs will be subjected for capturing and cross-matching through the Integrated Ballistics Identification System.*
>
> *He said the field investigator or investigator-on-case will no longer submit the items to the prosecutor. Instead, only a photograph of the firearm and a receipt issued by the local Crime Laboratory Office will be filed to the court.*
>
> *Should the prosecutor require the submission of the firearm, he should subpoena the Crime Lab to present the weapon.*
>
> *It is also imperative that the chain of custody be strictly observed and documented. As much as possible, the investigator-on case should personally submit the recovered firearms/shells/slugs to the Crime Lab," Cacdac said.*

"*He said all police regional directors and directors of the NOSUs, including the Highway Patrol Group, Criminal Investigation and Detection Group, Maritime Group and the Intelligence Group, shall be held accountable for failure by their investigators-on-case to observe the procedure.*

The mandatory examination of firearms-related evidence was aimed at correcting the practice of field investigators of not submitting the recovered firearms for cross-matching.

Cacdac said the practice does not only deprive the PNP the chance to cross-match the firearms, slugs/bullets and shells, but also the opportunity of building up its Ballistic Crime Database or data from ballistic evidence taken from the crime scene.

The IBIS is a computer-based system that gives the PNP the capability to efficiently cross-match firearms.

It also enhances the capability of the PNP to investigate, connect and cross-match criminal incidents involving the use of firearms.

However, this multi-million peso investment of the PNP will not be effective if it cannot build up its crime database which can only be obtained through the submission of all seized firearms, cartridges and slugs," Cacdac said.

"*The IBIS earlier helped the Police Regional Office 4-Ascore a major breakthrough in its investigation into the series of unsolved robbery-holdups and murders involving motorcycle-riding gunmen in Calabarzon.*

Ballistics examiners discovered that the caliber .45 Norinco pistol used in killing Laguna traffic official Nonilon Natividad was also the same weapon used in at least seven robbery-holdups and shooting incidents in Batangas."[35]

35 Journal Online, *Testing of firearms slugs now a must*, Retrieved April 2011, from http://www.journal.com.ph

NCGIGB Crime Gun Intelligence Best Practices Guide

ATF's National Crime Gun Intelligence Governing Board's (NCGIGB) publication entitled: *Crime Gun Intelligence Disrupting the Shooting Cycle: A best practices guide for implementing a crime gun intelligence program as part of a comprehensive violent crime strategy.*[36]

ATF NIBIN Memorandum

ATF administers the NIBIN program through funds appropriated for the purpose by Congress. ATF provides the NIBIN partners with technology, training, and communication lines. ATF is also responsible for the national coordination of the program. A Memorandum of Understanding between ATF and the NIBIN partner details the conditions under which this takes place and clearly outline the responsibilities, procedures, and expectations.

A 2019 copy of the MOU follows courtesy of the ATF NIBIN Branch.

36 National Crime Gun Intelligence Governing Board (NCGIGB) publication entitled: *Crime Gun Intelligence Disrupting the Shooting Cycle: A best practices guide for implementing a crime gun intelligence program as part of a comprehensive violent crime strategy*. 2018. Accessed at https://crimegunintelcenters.org/wp-content/uploads/2018/09/CGI-Manual-Best-Practices-ATF-27-AUG-18.pdf on January 24, 2019

SYSTEM USAGE AND MINIMUM REQUIRED OPERATING STANDARDS

To ensure the consistency, integrity, and success of NIBIN, ATF has enacted Minimum Required Operating Standards (MROS). The MROS, listed below, are rooted in ATF's "Four Critical Steps for a Successful NIBIN Program" – comprehensive collection, timeliness, investigative follow-up, and feedback. They identify the practices that best allow NIBIN to provide comprehensive and timely crime gun intelligence. Beginning July 2018, all NIBIN partners will comply with the following:

1. Enter all fired or test fired cartridge cases from serviced law enforcement agencies and/or departments through a NIBIN acquisition machine within 2 business days of receipt.
2. Enter accurately all required information during the acquisition process on the NIBIN acquisition machine.
3. Correlate and conduct a secondary review of any potential NIBIN leads through an approved NIBIN correlation machine within 2 business days.
4. Disseminate NIBIN leads within 24 hours.
5. Designate and maintain a NIBIN program administrator.
6. No policy shall inhibit or restrict NIBIN submissions by serviced law enforcement agencies and/or departments.
7. Operate with only qualified NIBIN users.

Please note that Standards 3 and 4 are not applicable to NIBIN sites using the NIBIN National Correlation and Training Center for correlation reviews of ballistic images.

AUDITS

ATF and the NIBIN Partner acknowledge their understanding that the operations described in this MOU are subject to audit by ATF, DOJ, the DOJ Office of the Inspector General, the General Accountability Office, and other auditors designated by the U.S. Government regardless of the funding source for the system (NIBIN Partner or ATF). Such audits may include reviews of all records, performance measurements, documents, reports, accounts, invoices, receipts, or other evidence of expenditures related to this MOU and the NIBIN Program.

Notwithstanding, ATF will conduct initial audits of all NIBIN Partners and their sites by December 31, 2020. After this date, the audits will occur once every two years for the remainder of the MOU. The purpose of the audits is to review and verify compliance with the required MROS. Each site must be in full compliance with the MROS in order to maintain access to NIBIN.

https://destinyhosted.com/glenddocs/2018/AACC/20180522_209/1279_03%20Agreement%20-%20ATF%20NIBIN%20MOU.pdf

An ATF-owned NIBIN unit will not be used to capture, share, or store ballistic images acquired at the point of manufacture, importation, or sale of a firearm, or images of law enforcement-issued firearms not associated with crimes. The NIBIN system does not store information related to firearms owners or registration.

APPLICABLE LAWS

The applicable statutes, regulations, directives, and procedures of the United States, DOJ, and ATF shall govern this MOU and all documents and actions pursuant to it. Nothing in this MOU will prevail over any Federal law, regulation, or other Federal rule recognized by ATF. Notwithstanding the foregoing, nothing in this agreement will be construed as a waiver of sovereign immunity in excess of or beyond that which is authorized by the law of the NIBIN Partner's jurisdiction. This MOU is not a funding document. All specific actions agreed to herein shall be subject to funding and administrative or legislative approvals.

MODIFICATIONS AND TERMINATIONS

This MOU shall not affect any pre-existing or independent relationships or obligations between the parties. If any provision of this MOU is determined to be invalid or unenforceable, the remaining provisions shall remain in force and unaffected to the fullest extent permitted by law and regulation.

Except as provided herein, this MOU may be modified or amended only by written mutual agreement of the parties. Either party may terminate this MOU by providing written notice to the other party. The termination shall be effective upon the thirtieth calendar day following provision of notice, unless an alternative date is agreed upon.

If either party terminates this MOU, ATF will retain its interest in the electronically stored information contained in the database and any ATF-deployed NIBIN system. ATF agrees to provide to the NIBIN Partner an electronic copy of the data collected by the NIBIN Partner, subject to Federal law and regulation.

LIABILITY

The NIBIN Partner hereby agrees to assume full and sole liability for any damage, injury, or harm of any sort caused by the operation and use of any NIBIN system or related to the use and interpretation of any information contained in, processed by, or extracted from any database subject to this agreement and the protocols and procedures of the NIBIN Program.

The rights and obligations set out in this MOU run between the signatories. Nothing in this MOU is intended to create any substantive or procedural rights, privileges, or benefits enforceable in any administrative, civil, or criminal matter by any prospective or actual third-parties.

https://destinyhosted.com/glenddocs/2018/AACC/20180522_209/1279_03%20Agreement%20-%20ATF%20NIBIN%20MOU.pdf

ATF-DEPLOYED SYSTEM INSTALLATION

The NIBIN Partner hereby agrees and acknowledges that all ATF-deployed NIBIN systems shall remain the property of ATF and the U.S. Government. ATF agrees to provide, install, and maintain all ATF-deployed NIBIN systems for use by the NIBIN Partner and any other law enforcement agencies served by or in partnership with the NIBIN Partner. Should the installation of the NIBIN system require physical construction at the site, the NIBIN Partner will be responsible for such construction and any associated costs. If a system is to be moved to allow additional access outside of a laboratory, ATF will work with the NIBIN Partner to ensure the appropriate protocols are put into place to ensure the integrity of crime gun evidence along with maximum use of the equipment.

ATF-DEPLOYED SYSTEM MAINTENANCE

For a period of three years from the date of installation, ATF will maintain all ATF-deployed NIBIN systems furnished to the NIBIN Partner and repair or replace inoperable or outdated systems in an expeditious manner, subject to availability and funding. However, maintenance and repairs required as the result of unauthorized movement, alteration, damage, or destruction will not be assumed by ATF. At all times, the NIBIN Partner agrees not to make or cause to be made any repairs, alterations, movements, additions, improvements, or replacements to the NIBIN systems not expressly authorized in writing by ATF in advance, and further agrees to exercise due care in every respect to prevent system movement, damage, destruction, or misuse. **Following the initial three-year period, regular maintenance and all associated costs will be the responsibility of the NIBIN Partner.**

ATF-DEPLOYED SYSTEM USAGE

Because the NIBIN Program focuses on the reduction of firearms-related violent crimes, the NIBIN Partner shall enter all eligible ballistic evidence recovered from crime scenes as soon as possible. In addition, the NIBIN Partner shall enter into NIBIN test-fire cartridge casings from eligible firearms taken into law enforcement custody in a timely manner. All NIBIN Partner-owned NIBIN equipment will be held to same standards as ATF-deployed systems. NIBIN Partners may not charge other law enforcement agencies for the entry of evidence into ATF-owned or ATF-maintained automated ballistics technology used in the NIBIN Program.

ATF-DEPLOYED SYSTEM REMOVAL

ATF retains the right to remove a NIBIN system upon: (1) a determination that the equipment is neglected or misused; (2) a determination that the equipment is not used effectively to combat violent crime; (3) failure to comply with any obligations or requirements set forth in this MOU; (4) receipt of written notification of the termination of the participation of the NIBIN Partner in the NIBIN Program; (5) the cancellation of this MOU by ATF; or (6) termination of the NIBIN Program by ATF.

https://destinyhosted.com/glenddocs/2018/AACC/20180522_209/1279_03%20Agreement%20-%20ATF%20NIBIN%20MOU.pdf

If ATF intends to remove a NIBIN system from the NIBIN Partner, ATF will provide written notice.

SYSTEM MOVEMENT

If the NIBIN Partner seeks to move its NIBIN system, it must submit a written request to ATF. ATF's decision regarding the proposed move will be provided to the NIBIN Partner in writing. Any movement of the NIBIN system after the initial installation will occur at the expense of the NIBIN Partner and only after receipt of authorization by, and coordination with, FTI. In order to realize maximum use of the equipment, it should be placed where trained personnel can expeditiously enter evidence. ATF will work with each partner to realize optimal placement of equipment to obtain actionable investigative leads.

In the event of a natural disaster, ATF will work with the NIBIN Partner to safeguard the NIBIN equipment.

Due to communication line installation/move requirements, NIBIN Partners must provide a minimum of 120 calendar days' advance notice to ATF and the NIBIN system manufacturer before the intended move of a NIBIN system.

In the event of unauthorized movement, alteration, damage, or destruction of any NIBIN system caused by its employees, contractors, or any other person under its control, the NIBIN Partner agrees to assume the cost of replacement or repairs of the equipment.

The NIBIN Partner agrees to report to ATF, within 5 calendar days, any incident involving the following: an unauthorized movement, alteration, damage, or destruction of ATF-deployed NIBIN systems, any unauthorized use of NIBIN systems or the unauthorized release of data related to the NIBIN Program.

COMMUNICATION LINES

ATF will provide and support primary communication lines necessary for connecting NIBIN systems to the NIBIN network.

SECURITY

The NIBIN Partner will comply with all ATF, DOJ and/or other Federal security requirements related to the NIBIN program, network, and systems to ensure the integrity of the program. These requirements are set forth under NIBIN security policies. ATF will promptly notify the NIBIN Partner should these requirements change. All NIBIN sites will not knowingly allow a person to access the NIBIN network using another person's user ID and password.

The NIBIN Partner agrees to conduct criminal background checks, including fingerprint checks, of all NIBIN users. Upon successful completion of these background checks, the NIBIN Partner will notify ATF's NIBIN Branch in writing.

https://destinyhosted.com/glenddocs/2018/AACC/20180522_209/1279_03%20Agreement%20-%20ATF%20NIBIN%20MOU.pdf

SYSTEM USAGE AND MINIMUM REQUIRED OPERATING STANDARDS

To ensure the consistency, integrity, and success of NIBIN, ATF has enacted Minimum Required Operating Standards (MROS). The MROS, listed below, are rooted in ATF's "Four Critical Steps for a Successful NIBIN Program" – comprehensive collection, timeliness, investigative follow-up, and feedback. They identify the practices that best allow NIBIN to provide comprehensive and timely crime gun intelligence. Beginning July 2018, all NIBIN partners will comply with the following:

1. Enter all fired or test fired cartridge cases from serviced law enforcement agencies and/or departments through a NIBIN acquisition machine within 2 business days of receipt.
2. Enter accurately all required information during the acquisition process on the NIBIN acquisition machine.
3. Correlate and conduct a secondary review of any potential NIBIN leads through an approved NIBIN correlation machine within 2 business days.
4. Disseminate NIBIN leads within 24 hours.
5. Designate and maintain a NIBIN program administrator.
6. No policy shall inhibit or restrict NIBIN submissions by serviced law enforcement agencies and/or departments.
7. Operate with only qualified NIBIN users.

Please note that Standards 3 and 4 are not applicable to NIBIN sites using the NIBIN National Correlation and Training Center for correlation reviews of ballistic images.

AUDITS

ATF and the NIBIN Partner acknowledge their understanding that the operations described in this MOU are subject to audit by ATF, DOJ, the DOJ Office of the Inspector General, the General Accountability Office, and other auditors designated by the U.S. Government regardless of the funding source for the system (NIBIN Partner or ATF). Such audits may include reviews of all records, performance measurements, documents, reports, accounts, invoices, receipts, or other evidence of expenditures related to this MOU and the NIBIN Program.

Notwithstanding, ATF will conduct initial audits of all NIBIN Partners and their sites by December 31, 2020. After this date, the audits will occur once every two years for the remainder of the MOU. The purpose of the audits is to review and verify compliance with the required MROS. Each site must be in full compliance with the MROS in order to maintain access to NIBIN.

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Further, the NIBIN Partner agrees to allow auditors to conduct one or more in-person interview(s) of any and all personnel the auditors determine may have knowledge relevant to transactions performed or other matters involving this MOU and the NIBIN Program.

The NIBIN Partner hereby acknowledges its understanding that, for accounting purposes, that the principles and standards for determining costs shall be governed by the policies set forth in the Office of Management and Budget Circular A-87, revised (available via the OMB, the Superintendent of Documents at the U.S. Government Printing Office, or via the Internet at http://www.whitehouse.gov/omb/circulars/a087/a087-all.html.)

PERSONNEL AND TRAINING

Prior to the execution of this MOU and a NIBIN system installation, the NIBIN Partner must employ, or have access to, a technical person capable of performing forensic microscopic comparison of bullet and cartridge evidence.

The NIBIN Partner agrees to provide and maintain sufficient personnel to operate the NIBIN system and agrees to allow use of the equipment by ATF personnel or our representatives to support the program at the host location. All personnel accessing NIBIN must be a Qualified NIBIN User as required by the MROS. This MOU should not be construed to require the hiring of any new personnel, except at the discretion of the NIBIN Partner. If the NIBIN Partner determines that additional personnel resources are required, all costs associated with this hiring will be borne by the NIBIN Partner. All users of the equipment must satisfy the same requirements as other NIBIN users and be properly trained, qualified and approved in advance by ATF.

Following basic entry training, ATF will verify trainee competency before authorizing network access. Individuals trained internally by a NIBIN Partner will not be certified as appropriately trained until they successfully pass a competency test administered by ATF.

The NIBIN Partner may provide access to the NIBIN system under its operational control to another law enforcement agency. Any such other law enforcement agency agrees to the same restrictions placed upon the NIBIN Partner by this MOU. However, the NIBIN Partner agrees to assume full liability and responsibility for the administration of such access.

Access to the NIBIN system will be under the management and control of the NIBIN Partner. The NIBIN Partner will ensure that only trained, cleared and qualified personnel have access to the NIBIN system.

Participating agencies will develop the appropriate standard operating procedures to ensure all eligible ballistic evidence will be submitted for NIBIN.

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COORDINATION

ATF and the NIBIN Partner agree to adhere to standardized procedures and policies for collecting, handling, documenting, transporting and preserving firearms, bullets, casings and any similar evidence submitted for analysis and input into NIBIN.

ATF and the NIBIN Partner similarly agree to adhere to standardized procedures and policies for the source data collection, input, exchange and protection of information, to include information as to the location where ballistic evidence was collected, the circumstances under which it was collected and all crimes to which the firearm(s) or other ballistic evidence is linked.

ATF and the NIBIN Partner agree to cooperate in the development and implementation of data entry protocols and quality assurance procedures for the NIBIN Program. ATF further agrees to cooperate with all participants in the NIBIN Program to establish model standards, protocols, and procedures for the users of the network. Such protocols will be applicable as they are implemented.

The NIBIN Partner will require all participating law enforcement agencies to adhere to the protocols, procedures, policies and quality assurance standards as established above.

The NIBIN Partner agrees to provide ATF with access to all information, reports and any other relevant information regarding crimes related to evidence entered into the system as well as monthly reports outlining historical, statistical and case adjudication information on the use and results of the use of the NIBIN Program and/or system and the related services provided by ATF and the system manufacturer in order to ensure the capturing of required performance management information. Such information will be gathered for the purpose of informing the law enforcement community, other Government agencies, Congress and the public on NIBIN results. Additionally, ATF will collect information for results-oriented performance measures.

PUBLICITY

Any NIBIN Partner who becomes aware of, or participates in, publicity related to the NIBIN system and investigations within their jurisdiction should advise ATF of same within 48 hours.

DISCLOSURE OF INFORMATION RELATED TO NIBIN

NIBIN system information may be shared with other law enforcement and prosecutors' offices in furtherance of criminal investigations and prosecutions. The NIBIN Partner shall not share any NIBIN system information for other purposes, including requests under the Freedom of Information Act, without express, written authorization from ATF.

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INCORPORATION OF APPENDIX

The Appendix to this MOU includes definitions of terms used and is fully incorporated herein. Because requirements may change over time, due to technological advances, security enhancements, or budgetary matters, the Appendix may be updated.

AGREEMENT

ATF and the NIBIN Partner hereby agree to abide by the terms and conditions of this MOU, including any appendices, and all policies of the NIBIN Program. The terms and conditions of this MOU will be considered accepted in their entirety upon the signature by the ATF Special Agent in Charge and the NIBIN Partner signature.

_____Chief Law Enforcement/Public Safety Official _____ Date
_____Police Department

_____ _____
Date
Special Agent in Charge, _____ Field Division
Bureau of Alcohol, Tobacco, Firearms and Explosives

_____NIBIN Branch Chief _____
Date
NIBIN Branch Chief, Firearms Operations Division
Bureau of Alcohol, Tobacco, Firearms and Explosives

APPENDIX

TERMS

Acquisition - An entry of a ballistic image.

ATF – Bureau of Alcohol, Tobacco, Firearms and Explosives, a principal law enforcement agency within the U.S. Department of Justice.

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Bullets – Designated calibers of projectiles fired from rifles, revolvers, and pistols.

Cartridge Casings – Designated metal casings from cartridges fired from rifles, shotguns, revolvers, and ejected from pistols.

Correlation – Automated data comparison of signature images to a database.

Crime Gun – Any firearm that is illegally possessed, used in a crime, or suspected by law enforcement officials of having been used in a crime or act of terrorism.

Found or Abandoned Firearms – Firearms that come into the custody of law enforcement outside of investigative or judicial process. A found firearm is located by law enforcement or a non-owner and the owner-possessor is not readily identifiable (e.g., a firearm found in an open field). An abandoned firearm may be a found firearm or a firearm where the possessor chooses to permanently relinquish control of the firearm and abandon any rights of ownership. ATF suggests that NIBIN Partners provide written notice to those persons permanently abandoning or temporarily relinquishing custody of a firearm that the firearm will be test fired and the results entered into the NIBIN System.

NIBIN Network – An ATF-designed and maintained system of interconnected computer systems and terminals used in support of the NIBIN Program.

NIBIN Program – The integration of aggressive targeting, investigation, and prosecution of shooters and their sources of crime guns using automated ballistics technology.

NIBIN Program Administrator – An individual the NIBIN site has designated to communicate with all parties (e.g., submitting law enforcement agencies, ATF Crime Gun Intelligence Centers) involved in the NIBIN process. The NIBIN Program Administrator must be a qualified NIBIN user and full-time employee of the NIBIN site. The NIBIN Program Administrator should be responsible for implementing and directing policies and procedures of the NIBIN site.

NIBIN System – Refers to the integrated ballistic imaging, analysis, and information processing system for use with automated ballistics technology.

Performance Measurements – Various management instruments used to evaluate program effectiveness in successfully removing shooters and their crime gun sources. Performance measurements also include the NIBIN Minimum Required Operating Standards and related audits.

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Potential Candidate for Confirmation – Two bullets or cartridges cases displaying sufficient similarity during a correlation review such that the items should be compared using traditional comparative microscopy by a trained firearm examiner to determine if they can be associated to the same firearm.

Qualified NIBIN User – technician and/or firearms examiner trained by ATF, Forensic Technology, and/or a NIBIN Authorized Trainer program to perform acquisition and/or correlation reviews of ballistic images on the NIBIN network.

Security Requirements – Types and levels of physical and cyber protection necessary for equipment, data, information, applications, and facilities to meet security policies and standards.

Security Policies – The set of laws, rules, directives, and practices that regulate how an organization manages, protects and distributes controlled information.

Timely – Occurring at a suitable time and without unnecessary delay. Some NIBIN submissions require a response within 48 hours to be considered timely.

Volunteer – An individual who has chosen to perform services without charge or payment and has entered into a written agreement with a NIBIN Partner addressing issues of confidentiality, costs, and waiver of all claims against the Federal government.

Cincinnati Police Department (CPD): SOP for NIBIN Entry

Cincinnati Police Department
Special Investigations Section
Standard Operating Procedure
National Integrated Ballistic Information Network (NIBIN) Entry

Entry Responsibilities

1) Pick up property from Cincinnati Police Department (CPD) property room every Tuesday through Friday.
    a) Call property room to set up time of pick up every day before pickup.

2) If CPD Officer contacts NIBIN Unit for urgent entry into Integrated Ballistic Information System (IBIS), NIBIN officer will pick up property from CPD property room ASAP any weekday. If call is during the weekend, NIBIN Officer will pick up property from calling officer before property goes to CPD property room. NIBIN Officer will ensure paperwork is completely and properly done for CPD property room. NIBIN officer will list property as taken for NIBIN in property book. NIBIN Officers name will be listed as transport officer and transfer date will be date of NIBIN Officers pick up from requesting officer (SEE STEP 9).

3) If another agency (not NIBIN trained) contacts CPD for NIBIN entry, NIBIN officer will have agency bring property to NIBIN room. NIBIN officer will not take possession of other agency's property. Agency will stay with property while NIBIN officer enters evidence into IBIS. Agency will take all evidence with them when they leave NIBIN room. NIBIN officer will make sure agency brings all necessary information for IBIS entry and entry in Brass Magic.
    a) Necessary information is:
        - Date of incident
        - Location of incident
        - Suspect/victim information
        - Agency property number of evidence entered into IBIS
        - Any additional case numbers identifying event, description of casing and or description of firearm.
    b) Necessary firearm information is:
        - Manufacturer of firearm
        - Model of firearm
        - Caliber of firearm
        - Serial number of firearm and ETRACE number of firearm.
            - NIBIN officer will assist agency, if necessary, to produce ETRACE number.

4) NIBIN officer will sign out all property from CPD property room. NIBIN officer will receive receipt of property. NIBIN officer will bring all property to NIBIN room and place receipt of property into NIBIN file.

5) Procedure for Crime Scene Evidence
    a) Unseal property envelope and triage all casings in property envelope. Determine which casing(s) best represent crime scene and will be used for IBIS entry through triage.
    b) Fill out ATF Form 7114.2 envelope for each casing used for entry into IBIS from that property envelope. Casing will be placed into ATF Form 7114.2 envelope.
        - Case # on envelope is actually property number of evidence.
        - Agency listed will be agency that recovered property.
        - Exhibit # will be 1C for first casing entered into IBIS from that property envelope, 2C for next casing entered into IBIS from same property envelope, 3C for next

1

casing entered into IBIS from that property envelope and so on. **It is possible that you may have 20 casings in one property envelope and after triage you only enter one casing (1C) into IBIS.**

- Date seized is date officer(s) collects evidence on scene of incident.
- Laboratory number is NIBIN number (NCIN#) given through Brass Magic (Step 5d).
- Caliber line will describe make and caliber of casing.
- Type line will describe material used to produce casing and firing pin impression produced on primer of casing. Example circle, glock or rectangle.
- GRC's line on envelope will be crime description. Example Shot Spotter, felonious assault, etc.
- Comments line on envelope is place to list CAD#, RMS#, homicide#, envelope#, etc.

c) If casings are collected at scene and placed into small casing envelopes which are all then placed into one large property envelope, NIBIN officer will place small casing envelope into ATF Form 7114.2 envelope along with casing.
d) NIBIN officer will enter all listed information into Brass Magic. Brass Magic will give NIBIN officer the NIBIN number used for IBIS entry.
e) NIBIN officer will enter casing(s) from ATF Form 7114.2 envelope into IBIS adhering to IBIS protocol. All casings entered will be cleaned before being entered into IBIS.
   - Cleaning is done with acetone on a cotton tipped applicator then compressed air to ensure casing if free of cotton.
f) After entry into IBIS, NIBIN officer will put casing back into ATF Form 7114.2, list cartridge as item entered into IBIS, sign name on line entered into IBIS by, and put date of entry into IBIS on line listed date.
g) NIBIN officer will place evidence tape on ATF Form 7114.2 sealing envelope with NIBIN officer's initials and date on evidence tape.
h) NIBIN officer will place ATF Form 7114.2 containing casing back into original property envelope received from CPD property room. NIBIN officer will place evidence tape on CPD property envelope, sealing envelope with NIBIN officer's initials, badge number, and date on evidence tape.
i) NIBIN officer will stamp CPD property envelope sticker with NIBIN stamp.

6) Procedures for Firearm Evidence:
   a) Unseal firearm envelope and retrieve property from inside.
   b) Make sure there is no obstruction in barrel and perform function test on firearm.
   c) Visually inspect firearm make, model, and serial number for accuracy with paperwork.
   d) Fill out ATF Form 7114.2 for casings that NIBIN officer will fire from firearm to be used for entry into IBIS. If additional firearms are located at the same scene, ATF Form 7114.2 will be filled out for every firearm.
      - Case # on envelope is actually property number of evidence.
      - Agency listed will be agency that recovered property.
      - Exhibit # will be 1T for casings fires from firearm for IBIS entry. If additional firearm(s) are located at the same scene then the second firearms casings will be 2T. If a third firearm is recovered from the same scene then that firearms casings will be 3T and so on.
      - Date seized is the date officer(s) recovered firearm(s).
      - Test fired by line is the name of NIBIN officer who conducts the test fire of firearm.
      - Date line is the date the NIBIN officer conducts test fire of firearm.
      - Laboratory number is NIBIN number (NCIN#) given through Brass Magic (Step 6F).

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- Make line is the manufacturer of firearm.
- Model line is the model of firearm.
- Serial number line is the serial number of firearm.
- Caliber line will describe make and caliber of casing.
- Type line will describe material used to produce casing and firing pin impression produced on primer of casing during test fire. Example circle, glock or rectangle.
- GRC's line on envelope will be crime description. Example Shot Spotter, felonious assault, and so on. Also listed on this line is if firearm is stolen and agency reporting theft.
- Comments line on envelope is place to list CAD#, RMS#, homicide#, envelope#, ETRACE#, DNA taken and so on.

e) NIBIN officer will access ETRACE and trace the firearm. ETRACE # will be listed on comments line of ATF Form 7114.2.
f) NIBIN officer will enter all listed information into Brass Magic. Brass Magic will give NIBIN Officer the NIBIN number used for IBIS entry.
g) NIBIN officer will perform two live fires from each firearm recovered.
   - *See SOP for test fire trailer????.*
h) Test-fired casings will be placed into corresponding ATF Form 7114.2 envelope.
i) NIBIN officer will enter casing from ATF Form 7114.2 envelope into IBIS adhering to IBIS protocol.
   - Cleaning is done with acetone on a cotton tipped applicator then compressed air is used to ensure casing is cotton free.
j) After entry into IBIS, NIBIN officer will put casing back into ATF Form 7114.2 envelope, list cartridge as item entered into IBIS; sign name on line entered into IBIS by, and put date of entry into IBIS on line listed date.
k) NIBIN officer will place evidence tape on ATF Form 7114.2, sealing envelope with NIBIN officer's initials and date on evidence tape.
l) NIBIN officer will file ATF Form 7114.2 envelope in numerical order in NIBIN file cabinet.
m) NIBIN officer will stamp CPD firearm envelope sticker with NIBIN stamp.

7) If property left over night in NIBIN room then NIBIN Officer will place all property into locked safe in NIBIN room.
8) NIBIN officer will take all evidence back to CPD property room ASAP.
9) If evidence is an urgent pick up (step 2 above), NIBIN officer will list property number as pending on ATF Form 7114.2 envelope, in Brass Magic and in IBIS. NIBIN Officer will take property directly to CPD property room and have property entered into evidence. NIBIN officer will wait for property receipt for property number. NIBIN officer will request property room send property receipt to original officer through interdepartmental mail.
   a) NIBIN officer will respond back to NIBIN room, when possible, and change pending property # to property number given by CPD property room. Changes will occur on test-fired casings in Brass Magic and IBIS. Since crime scene casings are now in original property envelope at CPD property, NIBIN officer does not have to put property number on that ATF Form 7114.2 envelope.

Follow-Up Responsibilities

1. Once the NIBIN National Correlation and Training Center (NNCTC) determines a correlation between casings, NIBIN personnel are notified via email.
2. NIBIN personnel will enter the correlation into Brass Magic and create a NIBIN lead.
3. NIBIN personnel will confirm and enter all relevant information for the lead.
4. The lead will be disseminated promptly, via email, to the affected agency who submitted the property.
    a. If the lead involves property recovered by the Cincinnati Police Department, the email will be sent to the Patrol Bureau Commander, the Investigations Bureau Commander, all Investigative lieutenants, and any other affected officer who could assist with follow up of the lead.
5. The Patrol Bureau Commander will assign the lead for follow-up.
6. The affected CPD unit assigned the correlation has 45 days to conduct their follow-up investigation. Results are then presented by the assigned commander during the weekly STARS (crime statistics) presentation.

NOTE: OCIS/ATF personnel may also conduct follow-up in conjunction with the assigned unit on a case-by-case basis.

Additional Duties:

1) If any agency request help with DNA of evidence, NIBIN officer will request agency bring evidence to NIBIN room for processing. If agency requests NIBIN officer respond to scene, the NIBIN officer will bring all necessary equipment to assist requesting agency, to include swabs for collecting DNA evidence. Swab evidence will be given to requesting officer to put into property for court.
2) Outside agencies that are trained for IBIS entry will call the NIBIN Unit to set up time for entry in NIBIN room. The NIBIN Unit will ensure no other agencies are scheduled to use NIBIN room. NIBIN officer will advise other NIBIN officers when outside agency will be using NIBIN room to avoid conflicts in scheduling. NIBIN Unit personnel will meet outside agency at NIBIN room and stay with outside agency until they are done with IBIS entries.
3) NIBIN Unit personnel will ensure NIBIN room is stocked with ATF 7114.2 envelopes. Office code for order is 773010. Additional phone number to call, if necessary, 702-870-7526 or 7528.
4) NIBIN Unit personnel will ensure NIBIN room has ample supply of new ammunition for NIBIN testing. Ammunition to be obtained either through ATF or CPD Target Range. Lead free ammunition will be requested.
5) NIBIN Unit personnel will ensure NIBIN room is locked and all evidence is stored in the safe any time NIBIN room is unoccupied.

Critical Elements

- Document the program and directives thoroughly—from high level vision and strategy to ground level tactical execution and day-to-day operations.
- Ensure the policy directive is issued from the appropriate level of authority (e.g., agency, administrative, legislative).
- Create formal MOUs to allow for participation in joint operations with various independent stakeholder organizations.
- Establish an internal review mechanism, and hold senior managers accountable for their subordinates' adherence to the directives.
- Communicate clearly and frequently.

Key Considerations

- Ensure policies and procedures are achievable, sustainable, and balanced in terms of people, processes, and technology.
- Communicate continuously with affected stakeholders up, down, and across their various organizations.
- Consider ways to maximize the reach and range of the directives by leveraging the power of the state (e.g., Office of the Attorney General) and the legislature (e.g., laws).

Summary

The Most Important Thing
Create standard operating directives to advance the concept of the presumptive approach in which the responsible parties are held accountable for following.

The Next Step
The next chapter discusses the fundamentals of task number four of *The 13 Critical Tasks*—Collecting Firearm and Related Evidence.

TASK 4

Collecting Firearm & Related Evidence

Why collect firearm and related evidence?

The early chapters of this book covered the fact that valuable data for taking the presumptive approach is found inside **and** outside a gun.

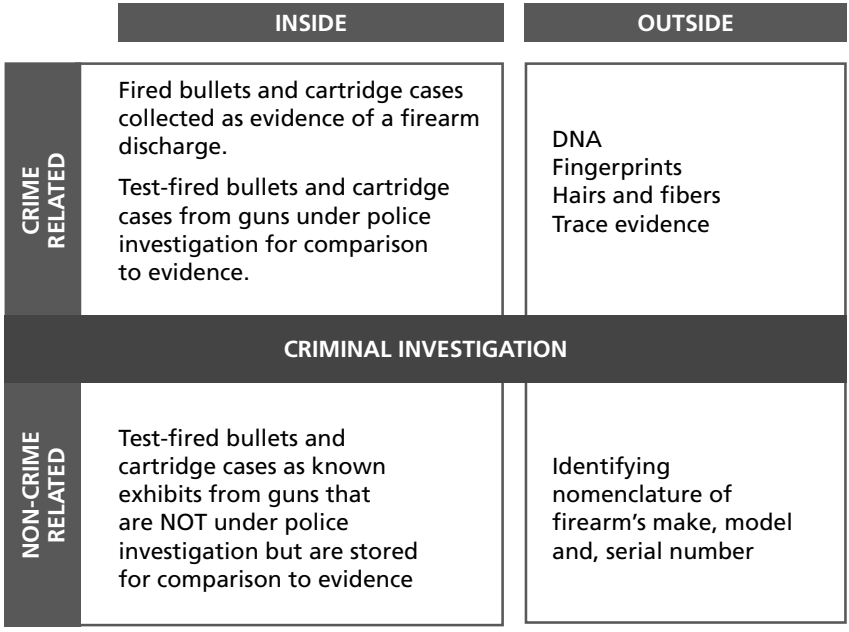
The inside of the gun provides ballistic data in the form of unique markings left on fired ammunition components by the internal working parts of a gun. In addition, other valuable forensic data, such as DNA, fingerprints, and hairs and fibers which can help police identify the gun possessor can be found on the surface bearing areas of the firearm and ammunition components.

The outside of the gun provides identifying data in the form of make, model, and serial number that can be used to track the transactional history of the gun. This data is regulatory rather than criminal in nature. It is generated and maintained in accordance with the laws and regulations that have been established to manage legitimate commerce in arms. For example, every gun made in the United States must, by law, bear certain identifying information which is visible on the **outside,** such as the name and location of the manufacturer and a unique serial number. In addition, gun manufacturers and dealers must keep certain records to document their firearm acquisition and disposition transactions during the regular course of their business. It is this type of transactional data that is generated and maintained over time which, if readily accessible, allows for the performance of what is commonly referred as a crime gun trace.

Simply put, police can trace the history of a recovered crime gun by following the paper trail of firearm transactions from the day the gun was manufactured to its first retail sale. Sometimes the information gained from a single crime gun trace can have immediate tactical investigative value when trying to identify who fired the "smoking gun".

Valuable trace evidence can also be found on fired ammunition components and firearms. For example, a bullet's surface may contain minute paint chips indicating that it may have struck an object with a painted surface before striking the victim. Any protocols put in place should also account for trace evidence collection. Crime-gun trace data collected over time can help police and policy makers identify patterns and trends that are of value when developing strategies and policies to keep guns out of the hands of criminals.

The generation and maintenance of this type of non-crime related data which is integral to crime gun tracing most often requires legislative authorization and ongoing regulatory control.



All crime related and non-crime related data that is found inside and outside the gun is important to the presumptive approach. It must be collected, processed, and well managed to generate both strategic information and tactical crime-solving actions.

The ability to sustain these actions becomes the challenge and the solution lies in a balance of people, processes, and technology. Think of creating this balance in terms of the three-legged stool as noted in the "People, Processes, and Technology" chapter. For example, if the desired process of test-firing every gun taken into police custody is truly unsustainable because the people or technology legs of the stool are too short, then balance the stool by shortening the process leg and do not test-fire every gun. The trick then is to decide which guns get test-fired and which do not. In other words, the task is to identify the types of firearms that are most often being used in crime. Historical gun trace data is useful for this purpose, providing that the data set is comprehensive and not skewed. Properly conducted crime gun tracing studies have been very accurate in identifying the types of guns that are most likely to be used in crimes within particular regions and by certain age groups.

Sometimes the people and process legs of the stool can be balanced through the integration of technology. For example, today, automated ballistic identification technology like IBIS can easily perform a process—that was previously thought to be unsustainable—which quickly and effectively searches a piece of ballistic evidence against thousands of other pieces of evidence in order to help law enforcement find more potential crime solving leads.

There is an obligation placed upon police administrators today to spend money in ways that produce best value outcomes. Because of advances in technology, forensic ballistic evidence can now be viewed in terms of a sustainable process with a high probability for the successful generation of investigative leads. IBIS technology can correlate evidence at speeds well beyond human capacity and exchange data quickly across multisystem networks like NIBIN. NIBIN has been proven to be very effective at generating actionable information to help the partnering police agencies solve more gun related crimes within single, and across multiple, police jurisdictions.

Therefore, it becomes a critical task to collect and enter **every feasible** piece of ballistic evidence into the system in order to benefit investigations, intelligence, and the value of the technology investment as well. Notwithstanding, this *comprehensive collection* mandate also extends to all of the various building blocks of crime gun intelligence.

To collect it you need to hear about it

A 2016 paper by Jillian B. Carr and Jennifer L. Doleac, researchers for the Brookings Institution[37], provides evidence on the extent of the underreporting of gun related violence. It shows that the underreporting of gun violence was a real concern in the two major cities studied: Washington, D.C., and Oakland, CA. The study found that, in D.C., only 12.4% of gunfire incidents resulted in a 911 call to report shots fired, and only 2.3% of gunfire incidents resulted in a reported AWDW (Assault With a Deadly Weapon, the crime that is committed when someone fires a gun in a threatening manner). In Oakland, the study found that only 6.4% of gunfire incidents result in a reported AWDW. These results are consistent with a model of violent crime where neither the victim nor the offender is interested in involving the police (e.g., gang or drug-related violence). The study also found evidence that the extent of underreporting varies across areas within the city.

Gunfire Detection Technology like ShotSpotter® consists of audio sensors strategically placed throughout a targeted area, which detect the sound of gunfire and triangulate its location. An algorithm analyzes the recorded sound and helps operators validate it as gunfire as opposed to something else. Logs of the key information are recorded (including time, location, and a recording of the incident) and are immediately sent to police for response.

The report found that: "*The appeal of ShotSpotter-generated data is that they likely provide a more accurate count of "true" gunfire incidents than data such as reported crime or 911 calls. In addition, they include timestamps and geocodes that are far more precise than those in reported crime and 911 call data."*

The bottom line in layman's terms is that Gunfire Detection Systems can "call the cops" even when people don't. Furthermore, these systems can pinpoint the true location of the gunfire whereas because of the physics of sound a human may not.

What happens when some jointly affected stakeholders institute processes to collect this comprehensive data while others do not? Read on.

37 Jillian B. Carr and Jennifer L. Doleac. *The geography, incidence, and underreporting of gun violence: new evidence using ShotSpotter data*. Brookings Institution. April 2016. Accessed at: https://www.brookings.edu/research/the-geography-incidence-and-underreporting-of-gun-violence-new-evidence-using-shotspotter-data/ on January 25, 2019.

CASE STUDY: MCCALLA, ALABAMA

In March 1996, the Jefferson County Sheriff's Office investigated a home invasion that became a robbery resulting in the murder of Hazel Love, a 68-year-old woman in McCalla, Alabama. Investigators recovered several discharged cartridge cases at the scene and, later, bullets at the autopsy. The evidence was submitted to the Alabama Department of Forensic Sciences (ADFS) lab in Birmingham. IBIS operators at the ADFS lab entered the evidence into the NIBIN database.

In September 2000, police in Adamsville, Alabama, conducted an investigation of a felon who was in unlawful possession of a firearm. At the time, a firearm was retained as evidence and placed on a shelf in the police department's property room.

In December 2002, Birmingham Police investigating a home invasion learned of the firearm stored in Adamsville. Investigators requested a NIBIN check on the firearm. Two weeks later, the ADFS Lab surprisingly reported that there was no NIBIN link to the Birmingham home invasion but there was indeed a link between the Adamsville firearm and the 1996 murder of Hazel Love in McCalla. The match was later confirmed by a firearms expert.

In February 2003, the Jefferson County Sheriff's Office arrested two men who were linked to the Adamsville firearm for the murder of Hazel Love as well as for serious crimes across the county. One of the suspects is now serving multiple life sentences without the chance of parole.

This case demonstrates the need that still exists today for the collection and sharing of ballistic data from crime scenes and firearms seized by police within the affected crime region—until this was done the murder of Hazel Love murder remained unsolved. One department's forgotten evidence is another department's crucial evidence. In this case, neither department knew of the other's evidence.

Recommended Best Practices

Model Crime Gun Guidelines for Massachusetts: Recovery of Firearms and Firearms Related Evidence

1. Purpose

These protocols are intended to provide guidance when seizing firearms and firearms related evidence during patrol or routine investigative activities. These protocols are NOT intended for the recovery of such evidence at major crime scenes, when specialized units are responsible for the collection of this evidence. At major crime scenes, the role of the first responder is to assist and secure the scene.

Adherence to these protocols will improve the collection of firearms and related evidence which will benefit investigations and prosecutions, provide valuable leads for unsolved crimes and help identify the origin of crime guns.

2. Definitions

2.1 Firearms and Firearms Related Evidence

This includes firearms, rifles, shotguns, machine guns, live cartridges, spent projectiles, discharged shot, discharged cartridge casings, and any parts thereof.

2.2 Crime Gun

Any firearm illegally possessed or used in a crime.

3. General Principals

3.1 Minimize Handling

- Wear gloves when reasonable
- Even with gloves latent prints can be obliterated
- be careful of areas with forensic evidence

3.2 Render Firearms Safe before Packaging

- When unloading a firearm always point it in a safe direction; and
- if unfamiliar with the firearm – call an expert

3.3 Collect & Package Properly (Section 4)

3.4 Submit Promptly (Within 7-14 days of seizure)

3.5 Thorough Police Work (Section 5)

- Forensic analysis is not a substitute for a thorough investigation.

4. Collection and Packaging

Firearms and firearms related evidence should be handled and packaged to preserve potential evidence including latent prints and DNA. This evidence should be labeled and sealed.

4.1 Firearms, Rifles, Shotguns & Machine Guns

All crime guns should be rendered safe and unloaded before packaging. Crime guns should be placed in a clean box or bag and secured to minimize movement. Its condition should be noted including location found, firearm and magazine capacity, the number of live and discharged cartridges and their location.

- Magazines and clips should NOT be unloaded. They may be placed in the same box as the crime gun, provided they are secured to prevent movement.
- **Revolver:** the cylinder should be marked to show its position at the time of seizure.

4.2 Live (unfired) Cartridges

Live cartridges may be recovered from crime guns or crime scenes. They may have markings if they have been cycled through the action of a crime gun. They may also have latent prints or DNA.

- A live cartridge chambered in a crime gun should be packaged in a clean envelope or bag.
- Revolver: live cartridges from the cylinder should be removed and packaged in a clean envelope or bag.

4.3 Discharged (fired) Cartridge Cases

Discharged cartridge cases may have mechanism marks which will link the cartridge case to the crime gun which fired it or to related shootings. Detailed documentation of the recovery of discharged cartridge cases can be instrumental in prosecutions.

- Discharged cartridge cases recovered from crime scenes should be individually packaged. Note the location of each cartridge case.
- **Revolver:** discharged cartridges from the cylinder should be removed and packaged in a clean envelope or bag.

4.4 Spent (fired) Projectiles

An examination of spent projectiles may help determine caliber or gauge, type and possible manufacturer of the gun from which the projectile was fired. In some instances, the examination of projectiles can establish the actual crime gun. An effort should be made to locate and recover spent projectiles.

- Spent projectiles recovered from crime scenes should be individually packaged. Note the location of each projectile.
- Remove spent projectiles with care not to damage or mark the surface. Often this will require leaving a layer of material around the projectile. Each projectile should be individually packaged taking precautions to preserve the projectile. Note the recovery location of each projectile.

(The recovery of projectiles may require experts.)

5. Thorough Police Work Required

Successful prosecution requires thorough police work during the entire investigation. Often, it is very difficult to recover forensic evidence from firearms or related evidence. Police and prosecutors should not solely rely on the results of forensic analysis as a substitute for a thorough investigation.

To ensure maximum results:

- **Document activity and observations, including:**
  - the location and condition of evidence,
  - the chain of custody,
  - who unloaded & packaged the firearm,
  - everyone who handled the firearm and evidence (comparison prints and DNA exemplars may be required),

- **Conduct Interviews – an admission is important**
  - Suspects
  - witnesses
- **Fingerprint the defendant & submit print cards**
- **Perform stolen checks on all firearms**
- **Perform an ownership trace on firearms** (Section 7)

6. Laboratory Analysis

Firearms and related evidence must be submitted with a completed CL-1 form and can be submitted to Maynard, Danvers, Lakeville or Springfield facilities.

6.1 Certification as a Firearm or Ammunition

MGL c 140 s 121A provides that for the purpose of identification of firearms that a certificate by a ballistics expert is prima facie evidence. The State Police Firearms Identification Section will provide these services on all crime guns.

6.2 National Integrated Ballistic Information Network (NIBIN)

NIBIN is a system which allows the comparison of dis-charged cartridge cases. Cartridges recovered from crime scenes will be compared to each other and to cartridges fired from pistols submitted to the lab. This comparison is designed to provide investigative leads by linking multiple crimes and crime scenes to a recovered weapon.

6.3 Latent Prints

In a small number of instances, usable latent prints can be recovered from firearms or related evidence. Firearms and related evidence may be processed for latent prints upon request and when there is probative value to such testing. Typically, firearms will NOT be processed for latent prints when:

- The firearms was taken from the person of the defendant.

6.4 DNA

Firearms and related evidence may be processed for DNA upon request when there is probative value to such testing and available laboratory resources. Typically, firearms will NOT be processed for DNA if:

- The firearm was taken from the person of the defendant; or
- If the firearm was handled, in the ordinary course by more than three individuals, consult your supervisor and /or prosecutor as to whether fingerprint testing is warranted.

Requests will be considered on a case by case basis upon proper request consistent with laboratory practice and prosecutorial need. Questions concerning DNA should be directed to the Case Management Unit at (978) 451-3440

6.5 Serial Number Restoration

Firearms submitted with obliterated serial numbers will be processed to restore numbers if possible.

7. Ownership Trace

ATF provides ownership tracing through its National Tracing Center. Tracing the ownership of firearms may provide important investigative leads. Tracing may also supply strategic information concerning the source of crime guns.

7.1 Complete ATF Trace Request Form

Officers should complete the ATF Trace Request form at the time of seizure. It can be submitted directly to the ATF or submitted to the Firearms Identification Section at the Crime Laboratory with the seized firearm. FIS will verify the firearm's make, model and serial number and cause a trace of the weapon to be made.

7.2 Trace Results

The submitting agency and respective Fusion Center will be notified of results within 30 days. The investigating officer will ensure the results are forwarded to prosecutors as part of the case /discovery file.

8. Firearms Recovery Kit

Through Project Safe Neighborhood, the US Attorney's Office is providing these kits to facilitate the collection and preservation of firearms and related evidence.

8.1 Kit Contents

The firearms kits will consist of a gun box, nylon ties to secure the firearm, envelops to secure rounds, casings and magazine, Nitrile gloves, tape to seal the box, CL-1 form to submit evidence, ATF Trace Form and seizure checklist.
Acknowledgements: These guidelines are provided courtesy of the City, State and Federal agencies that collaborated on their development:

- **City:** The Boston Police Department.
- **State:** The Massachusetts State Police & Fusion Center, the Criminal History Systems Board, and the Executive Office of Public Safety and Security.
- **Federal:** The Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) and the United States Attorney's Office.

Disclaimer

These protocols have been developed as a guide for the collection of firearms and related evidence. It is understood that public safety is paramount and often the ideals contained herein may not be practical under real life conditions where the presence of firearms create life threatening situations. As such these protocols do not place obligations upon law enforcement but rather provide guidance to maximize the evidentiary value of seized firearms and related evidence.

Revised 6/2011

NYPD: A Central Repository

The New York City Police Department has a policy in which all firearms and firearm-related evidence is sent to a single centralized ballistics unit for examination, entry into IBIS, and gun tracing. The NYPD has established partnership agreements with other federal, state, and local law enforcement agencies operating within the jurisdiction of the city to submit all of their firearms and firearm-related evidence to the NYPD Ballistics Unit.

West Palm Beach Police Department Firearms Protocol

The West Palm Beach Firearms Protocol focuses primarily on ballistics and gun tracing. The procedures contained in the protocol are broken down into three main categories:

1. **Procedures for the Collection of Crime Guns and Crime Gun Related Evidence**; These include the following: Guns Actually Used in a Crime & Recovered on the Crime Scene -No handling of guns by patrol officers without gloves -Crime Scene Investigator will photograph weapon -Crime Scene Investigator will collect & process fingerprint & DNA Guns Recovered Due to a Traffic Stop or Suspect Stop/Search Found Property Guns.
2. **Procedures for Processing All Recovered Crime Guns and Crime Gun Evidence**; These include the following: The crime gun(s) will be traced. The crime gun(s) and ammunition will be submitted for test-firing and entry into NIBIN. All bullet projectiles and/or ammunition casings recovered at all crime/shooting scenes shall be submitted. The crime gun(s) and ammunition will be processed with swabs for the presence of DNA and treated with superglue fumes to assist in preserving any existing latent fingerprints for identification.
3. **Procedures for Processing All Crime Gun Arrests**; These include the following: The arresting officer should try to personally fingerprint the defendant prior to leaving them at the jail. The arresting officer should try to personally obtain a DNA swab sample from the arrestee. Document all statements by the defendant regarding his/her possession of the firearm. Prepare a detailed narrative report regarding the arrest. Obtain a criminal history printout for the defendant. NIBIN, Crime Gun Tracing, DNA, Prints, Stolen cars, etc.

Taking a Stand: Reducing Gun Violence in Our Communities

This comprehensive report was produced by the *International Association of Chiefs of Police (IACP) 2007 Great Lakes Summit on Gun Violence*. It recommends a number of best practices for taking the presumptive approach. Recommendations 27 and 30 directly relate to the collection of ballistic and crime gun trace data. Below are some selected excerpts from each:

Recommendation 27:

> *Congress should fund the National Integrated Ballistic Information Network (NIBIN) and law enforcement agencies should use it consistently; it should also be funded to become integrated nationwide.*
>
> *…Through NIBIN and in coordination with ATF, state, local and tribal law enforcement agencies can enter the fired bullets and cartridge cases recovered from crime scenes into the Integrated Ballistics Information [Identification] System (IBIS) database to determine whether the ballistic evidence from that particular crime gun matches the evidence from any other crime scene. Matching ballistic evidence across crimes allows law enforcement to identify patterns of crime gun use, solve gun crimes (including crimes that have remained unsolved over several years) and disrupt illegal gun trafficking. NIBIN enables law enforcement to combat crimes—including gang crimes—where frequent incidents of gun violence may be conclusively linked and establish a case for prosecution. Ideally, NIBIN allows law enforcement to follow guns wherever the guns themselves are used and to connect crimes that might have never been connected, whether because of geography, jurisdictions with their own separate intelligence databases or other factors. It is recommended that all law enforcement agencies partner with ATF to ensure that a robust forensic database is built and continuously maintained.*

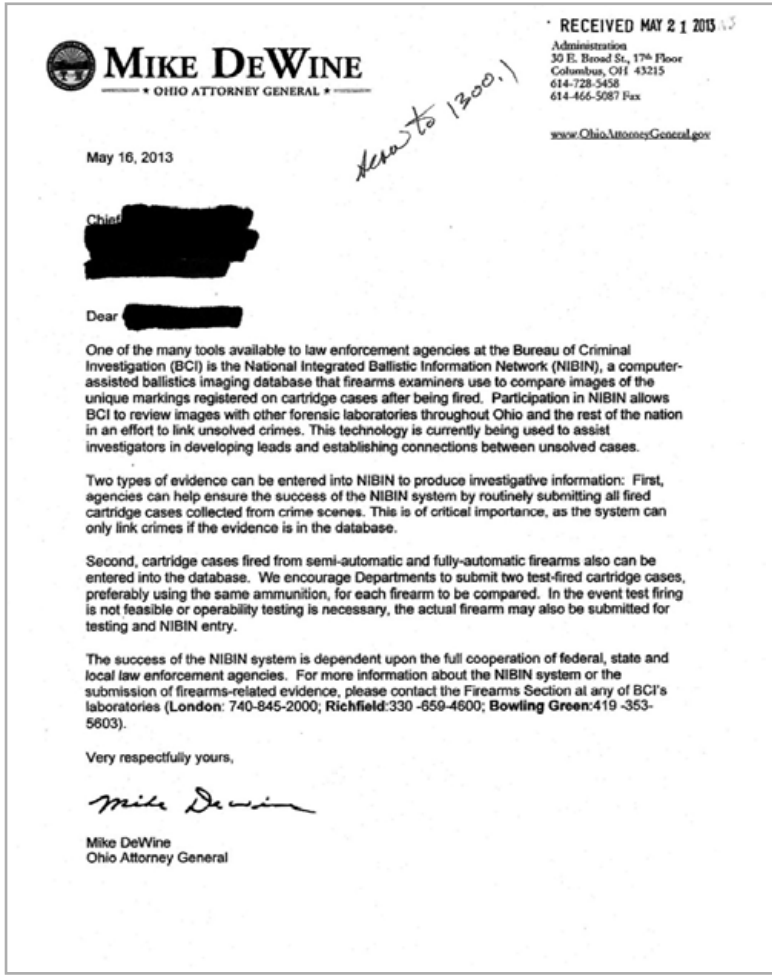
Recommendation 30:

Every law enforcement agency should use eTrace, ensure that officers know how to properly recover and process crime guns and make sure that officers trace all firearms recovered:

. . . Then they must generate a comprehensive description of the gun. This description should include serial number, manufacturer, type of firearm, caliber, model and any distinguishing features. This description, entered into the National Crime Information Center (NCIC), may yield critical information including whether the gun has been reported lost or stolen or was used in a previous crime. Such information is invaluable to officers interacting with individuals at the scene of a crime, or investigating the crime long afterwards. Ensuring that officers are knowledgeable about NCIC and the way in which records must be submitted and received will ensure agency success in handling crime guns as tools for solving crimes. The requirement, established by the Gun Control Act of 1968, that all guns manufactured or imported into the U.S. contain a serial number and the name, city and state of the gun's manufacturer assists law enforcement in tracing the gun's history. The accurate identification and tracing of recovered firearms is one of the most important steps in a criminal gun investigation. Tracing every recovered crime gun will eventually reveal previously unidentified persons or suspects, addresses and other critical associations. Comprehensive tracing facilitates the development of a database that tracks each traced gun from manufacturer to the wholesaler and eventually to the FFL, who by law must identify the first known purchaser of that gun. In conjunction with ATF's Firearms Tracing System (FTS), which contains millions of records such as prior traces, lost or stolen guns, multiple handgun sales, and interstate firearms shipments, a trace can yield information that is critical in solving many crimes, such as firearms trafficking, straw purchases or an FFL who has falsified a sale or has failed to provide accurate information on purchasers, homicides and gang shootings. Law enforcement executives should commit their agencies, through written policy, to tracing guns using the best means available, including eTrace. Maintained by the National Tracing Center Division (NTC) of ATF, eTrace allows law enforcement agencies to make trace requests and receive the results of those requests over the Internet. eTrace, available only to accredited agencies, enables them to expedite traces, pursue multiple traces and review all trace results at once. It is imperative that agencies learn to trace all guns through NTC and also strive to become accredited to receive eTrace.

Ohio Attorney General Letter to Police Chiefs

Ohio Attorney General Mike DeWine has indicated his public support for the crime solving benefits of NIBIN and that he intends to make sure that police forces know about NIBIN and use it for every gun. In follow up to that the AG sent the following letter to all Police Chiefs in Ohio.



MIKE DEWINE
* OHIO ATTORNEY GENERAL *

RECEIVED MAY 2 1 2013

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May 16, 2013

Chief [redacted]

Dear [redacted]

One of the many tools available to law enforcement agencies at the Bureau of Criminal Investigation (BCI) is the National Integrated Ballistic Information Network (NIBIN), a computer-assisted ballistics imaging database that firearms examiners use to compare images of the unique markings registered on cartridge cases after being fired. Participation in NIBIN allows BCI to review images with other forensic laboratories throughout Ohio and the rest of the nation in an effort to link unsolved crimes. This technology is currently being used to assist investigators in developing leads and establishing connections between unsolved cases.

Two types of evidence can be entered into NIBIN to produce investigative information: First, agencies can help ensure the success of the NIBIN system by routinely submitting all fired cartridge cases collected from crime scenes. This is of critical importance, as the system can only link crimes if the evidence is in the database.

Second, cartridge cases fired from semi-automatic and fully-automatic firearms also can be entered into the database. We encourage Departments to submit two test-fired cartridge cases, preferably using the same ammunition, for each firearm to be compared. In the event test firing is not feasible or operability testing is necessary, the actual firearm may also be submitted for testing and NIBIN entry.

The success of the NIBIN system is dependent upon the full cooperation of federal, state and local law enforcement agencies. For more information about the NIBIN system or the submission of firearms-related evidence, please contact the Firearms Section at any of BCI's laboratories (**London**: 740-845-2000; **Richfield**:330 -659-4600; **Bowling Green**:419 -353-5603).

Very respectfully yours,

Mike DeWine

Mike DeWine
Ohio Attorney General

NCGIGB Crime Gun Intelligence Best Practices Guide

ATF's National Crime Gun Intelligence Governing Board's (NCGIGB) publication entitled: *Crime Gun Intelligence Disrupting the Shooting Cycle: A best practices guide for implementing a crime gun intelligence program as part of a comprehensive violent crime strategy.*[38]

The IACP Model Policy for Firearm Recovery

The Model Policy covers the initial response to incidents involving the recovery of firearms and fired evidence, and its collection, handling and transportation, documentation of the scene and interviews, highly recommended forensic tests and database queries, such as NCIC, eTrace, and NIBIN. The Model Policy is accessible to all IACP members through the Policy Center's On-line Resources at: **www.theiacp.org/resources/policy-center-resource/firearm-recovery**

Critical Elements

- Collaborate with affected stakeholders to identify a sustainable and timely process for following the use of the presumptive approach in the collection of information from inside and outside a crime gun by balancing people, processes and technology.
- At a bare minimum establish a protocol to: (1) test-fire all guns taken into police custody of certain specified types and calibers that data indicates are most likely to be used in crime, (2) enter all test-fired exhibits and all recovered ballistic evidence of corresponding calibers using an automated ballistic identification technology like IBIS and NIBIN, and (3) trace all 40 guns taken into police custody using an electronic information management system like ATF eTrace, INTERPOL iArms, or IBIS Firecycle.
- Thoroughly document the protocol for data collection and integrate it into the standard operating procedures within agencies and through a formal MOU across agencies operating within the same affected crime area.

38 National Crime Gun Intelligence Governing Board's (NCGIGB) publication entitled: *Crime Gun Intelligence Disrupting the Shooting Cycle: A best practices guide for implementing a crime gun intelligence program as part of a comprehensive violent crime strategy*. 2018. Accessed at https://crimegunintelcenters.org/wp-content/uploads/2018/09/CGI-Manual-Best-Practices-ATF-27-AUG-18.pdf on January 24, 2019.

Key Considerations

- Identify the various police, forensic, and prosecutorial agencies that are joint stakeholders operating within the same affected crime area.
- Determine the crime gun trace capability of the jurisdictions. Are the laws and regulations in place that enable the collection of and access to non-crime related information related to the legitimate commerce of firearms and their acquisition and disposition.
- Evaluate the adequacy of the data collection processes in terms of identification, integrity, handling, storage, quality, and input and output processing times.

Summary

The Most Important Thing
Collect the many types of data that should be part of any presumptive approach, such as ballistic data, crime gun trace data, DNA, fingerprints, hairs, fibers, and acoustic data used to pinpoint the location of firearm discharges.

The Next Step
The collection of data and evidence is one thing, but getting it to where it needs to be processed is another. The next chapter discusses the fundamentals of task number five of *The 13 Critical Tasks*—Transferring Evidence.

TASK 5

Transferring Evidence

Why transfer evidence?

On the surface this task is fairly straightforward. An item of property collected at a crime scene, or otherwise taken into police custody, must be transferred to skilled personnel at a lab or other facility (e.g., Ballistics Unit, Bureau of Identification, etc.) that is properly equipped to conduct the required examinations. However, depending upon a number of factors, such as proximity of services, staffing, funding, organizational culture, and standard operating procedures—or the lack thereof—the transfer of property can present many challenging obstacles when attempting to follow the presumptive approach. Acting in the spirit of collaboration and determination, the stakeholders can overcome these challenges together. The goal here is to embed a sustainable solution that meets the timeliness requirements of all of the stakeholders. This may call for the better balancing of people, processes, and technology, and changes in organizational behavior and procedures. The redistribution of certain generic tasks may be necessary in order to better balance workloads, maximize expert resources, and accelerate processes.

FastTRAX Trial: Redistribution of Test-Firing and Data Entry Tasks

In January of 2007, Ultra Electronics Forensic Technology entered into a four-way partnership with ATF, the Virginia DFS—Eastern Laboratory, and the Norfolk Police Department to conduct a trial of a potential services concept dubbed FastTRAX™.

Inputs

ATF approved the technical solution, granted network access, and performed the initial pilot project quality review. The Virginia DFS—Eastern Lab set quality protocols, provided hit confirmation review, and reported confirmed hits to the Norfolk PD. The Norfolk PD performed the test-firing of 372 seized auto-loading pistols, submitted the test-fired exhibits to Ultra Electronics Forensic Technology's facility in Florida, and followed-up on the investigative leads provided by FastTRAX services in the form of NIBIN Hits. Ultra Electronics Forensic Technology acquired the test-fired cartridge cases, entered the data into IBIS, searched the NIBIN database, reviewed the results, and forwarded recommendations back to the Norfolk Police and the Virginia DFS—Eastern Laboratory.

Outputs

From among the 372 test-fires involved in the pilot project, Ultra Electronics Forensic Technology reported seven associations or high confidence matches to the lab and the Norfolk PD within five to seven business days. Overall, based on the data produced during the processing of the 372 firearms by each of the process partners, FastTRAX required 50 percent fewer man-hours in comparison with the current standard method used to process test-fires. **In roughly 10 weeks, the pilot project reduced the equivalent of seven months of data backlogs.**

Outcomes

Within the first two weeks, one of the FastTRAX matches helped the Norfolk PD arrest a gang member for murder. Another FastTRAX match to a gun taken into custody by Norfolk PD was linked to a shooting under investigation in a nearby police jurisdiction. The link provided the other agency with valuable information about the shooting being investigated. Note that this situation represents a very common scenario in which police agency "A" takes a gun into custody and stores it in their property room, unaware that the gun is a sought-after weapon for a murder that police agency "B" is investigating. It underscores the need for regional protocols.

The Norfolk PD was able to find a sustainable way in which to restart its practice of routinely submitting test-fires for forensic analysis. In fact, they had stopped sending guns to the lab for test-firing because of the long turnaround times. The Virginia DFS—Eastern Laboratory's forensic experts were able to concentrate on processing crime scene evidence rather than spending time creating cases for 372 submitted firearms in order to test-fire them. The forensic experts at the lab saved time by not having to process test-fires that would produce no information for investigators. Instead, the pilot project allowed the lab to focus its limited resources on the seven high confidence matches provided by FastTRAX. These matches had a very high potential to provide investigative leads to the detectives investigating the related crimes.

Estimating a processing time of 1.25 hours for the lab to complete the required test-fire process of a firearm, the lab saved almost 500 hours of precious resource time by not having to process all 372 firearms. The NIBIN program gained more data, and thus provided more value to the NIBIN partners. The trial showed that IBIS data input and correlation review services performed by partners outside of a lab could provide a number of Crime Gun Intelligence benefits.

FastTRAX Benefits:

- Helped generate more timely and actionable investigative leads and helped stimulate collaboration between detectives and forensic experts.
- Helped reduce the evidence processing backlogs of the involved police agency and crime lab.
- Helped give broader access to advanced technology, like IBIS, to more law enforcement agencies.
- Helped more police agencies participate as NIBIN partners and derive more benefits from it.
- Showed that more crimes can be solved when the evidence of one agency is shared among other agencies.
- Helped save all of the participants significant amounts of time by allowing them to focus on doing what they do best, rather than wasting time on the performance of non-optimized processes.
- Proved to be an effective tool that can help criminal justice stakeholders balance the people, processes, and technology required to successfully deal with escalating levels of firearm-related crime.

When dealing with ballistics, crime gun tracing, fingerprints, and DNA, ways must be found to overcome the time and distance factors involved in getting firearms and related evidence where they need to go. Collaborative thinking and action among the stakeholders will lead to a solution. The FastTRAX trial was an example of collaborative thinking and action leveraged with technology.

Stakeholders occupying a position of authority in the criminal justice chain can encourage and influence stakeholders at each level of collaboration required. For example, in Washington D.C., there's a story going around that many years ago firearm evidence didn't always make it to the Ballistics Unit. This sometimes resulted in problems for the prosecutors who were caught off guard in front of juries with crime guns that were inoperable or did not meet the legal definitions. The problem disappeared when the prosecutor's office refused to open a criminal case on any firearm that was not accompanied by a statement from an expert witness who would testify as to the gun's ability to expel a projectile by action of an explosive.

The core message is simple: Every crime gun holds potentially crime solving information—people thinking and acting together can change their processes to meet their needs in this world of rapidly advancing technology.

Recommended Best Practices

ATF NIBIN National Correlation and Training Center (NNCTC)

A 2016 NIBIN innovation, the NNCTC was an outgrowth of the need to expand NIBIN to more police partners faced with rising incidents of firearm-related violence. The goal is to provide them with timely and actionable Crime Gun Intelligence (CGI)—and do it in a more cost effective manner.

Problem: The expert firearm examiner resources needed to review the NIBIN data and connect the crimes, guns and suspects, were located in the local and regional Forensic Labs—not the police agencies. And many of those Labs were already faced with backlogged case work translating into investigation-numbing delays. ATF estimates that the data review/correlation process accounts for roughly two-thirds of the overall NIBIN process.

Solution: Move the NIBIN Data Input terminals into the police departments and link them to the NIBIN Data Analysis terminals at NNCTC where ATF had expert firearm examiner resources on staff who could conduct the reviews and provide NIBIN Leads back to the police agency within 24 to 48 hours. ATF defines a NIBIN Lead as:

> *"An unconfirmed, potential association between two or more pieces of firearm ballistic evidence based on a correlation review of the digital images in the NIBIN database by either a firearms examiner or a trained NIBIN technician. A NIBIN Lead is intended to provide a lead for investigative purposes."* [39]

At time of writing, the NNCTC which conducts correlation reviews for 31 NIBIN sites representing 183 law enforcement agencies, has a 98.9% confirmation rate for all NIBIN Leads generated.[40]

ATF seeks to expand the NNCTC over the next two years, eventually servicing all NIBIN sites throughout the United States freeing up assets at local sites and allowing them to focus on the timely collection and entry of evidence.

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39 Bureau of Alcohol, Tobacco, Firearms and Explosives. *Minimum Required Operating Standards For National Integrated Ballistic Information Network (NIBIN) Sites*. 2018. Provided courtesy of the ATF NIBIN Branch, December 20, 2018.

40 National Institute of Justice, *The National Crime Gun Intelligence Center Initiative, NIBIN Entry/Correlation and Crime Gun Tracing*. Accessed at https://crimegunintelcenters.org/nibin-entry-correlation-and-crime-gun-tracing on January 24, 2019.

The NNCTC:

- Reviews every image entered into NIBIN for quality control.
- Provides consistent, capable correlation service and layers of peer-to-peer review of correlations.
- Issues NIBIN Leads to partner sites, law enforcement, and the respective CGIC within 24 to 48 hours of entry.
- Serves as ATF's NIBIN Training Center.
- Is a more cost-effective option for NIBIN sites and ATF since it requires less equipment, personnel, and training.

Designate Responsible Vault Custodians

Many agencies appoint evidence vault custodians who are responsible for controlling access to the vault, maintaining evidence accountability, ensuring that policies and procedures are followed, and protecting and maintaining the vault environment. Vault custodian assignments may be full-time in nature or assigned as ancillary duties. Periodic inventories should be conducted by two disinterested parties who are not vault custodians. When vault custodians change assignments and new ones are appointed, an inventory should be conducted and any discrepancies resolved before responsibility for the vault is passed to the new vault custodian.

Walk-in Wednesday Program: Los Angeles Police Department

The LAPD Firearms Analysis Unit has developed "Walk-in Wednesdays" —a unique approach to providing timely information to investigators. Negating the need to complete evidence transmittal reports and ship and transport evidence, the project allows investigators to walk their ballistic evidence into the lab at certain appointed times when firearm examiners are on duty. The examiners screen the evidence, enter it into IBIS, search the NIBIN database, and provide immediate feedback to the investigators. Within 24 hours, the lab provides investigators with feedback on the results of the IBIS correlations. The program quickly puts investigative information in the hands of detectives for immediate follow-up and corroboration. The program has worked extremely well for LAPD and other agencies have adopted it as well.

Note: As of this writing, the LAPD is working with property room custodians to develop a protocol that eliminates the initial step of having the detectives walk evidence into the lab.

Open Case File: Allegheny County Medical Examiner

The Allegheny County Medical Examiner's lab provides forensic services for a number of law enforcement agencies within the county. The agreement with submitters of ballistic evidence is that the evidence will be retained by the lab until such time that the case is disposed of or the submitting agency instructs otherwise. This practice is designed to eliminate the need for time- and resource-wasting callbacks of evidence. For example, the practice in many areas of the country is to summit fired bullets and evidence to the lab. The lab will examine and process the evidence through IBIS and a network like NIBIN and, if there is no further need to hold on to the evidence, it is returned to the submitting agency. Subsequently, new evidence is submitted by the same agency or another agency, or a gun is sent in for test-firing and processing through IBIS. When the new evidence or test-fires are processed through IBIS, it frequently happens that the new evidence or test-fires appear to have similarities to the evidence that was previously submitted and then returned.

The lab has to issue a callback for this prior evidence to be returned for comparison with the new evidence. This callback procedure takes time and resources on the part of the lab and the police agency. It has been reported during *The 13 Critical Tasks Workshops* that the callback process could take from days to weeks to months and that it is not unusual for the same evidence to be called back multiple times. Not only do callbacks waste time and resources, they expose the evidence to loss and damage and can leave its integrity in question. Maintaining an open case file of the evidence on behalf of the submitting agency until it is no longer needed avoids these pitfalls.

Submission of Outside Agency Evidence to ATF

Not all police departments in the U.S. have local access to a NIBIN data entry station. In these instances, ATF has issued a 2019 memorandum to address processes for SUBMISSION OF OUTSIDE AGENCY EVIDENCE TO ATF. The memorandum provided courtesy of the ATF NIBIN Branch follows on the next pages.

ATF's NIBIN Program

NIBIN Branch, Field Operations, Bureau of Alcohol, Tobacco, Firearms and Explosives

January 2019

SUBMISSION OF OUTSIDE AGENCY EVIDENCE TO ATF

The purpose of this memorandum is to address processes for submission of crime scene shooting evidence and test fires from crime guns into the National Integrated Ballistic Information Network (NIBIN) through the use of the Integrated Ballistic Identification System (IBIS).

In January 2001, the Department of Justice (DOJ) and the Department of the Treasury issued joint memoranda directing their Departments' law enforcement agencies to enter all crime gun ballistic information into the Integrated Ballistic Identification System (IBIS). NIBIN is a nationally networked system administered by ATF to assist law enforcement in solving firearms-related violent crimes. IBIS is a collection of electronic images of ballistic evidence recovered from crime scenes and test-fired firearms that have been taken into law enforcement custody in the United States. IBIS is a proven investigative and intelligence tool that can assist in the identification of leads that were not previously available; can link firearms evidence from multiple crime scenes that were committed with the same firearm; and can link firearms evidence from a crime scene to a recovered firearm. IBIS may be searched locally, regionally, or nationally in an automated environment for potential matches or "hits."

ROLES AND RESPONSIBLITIES - AGENCY NIBIN ENTRY GUIDELINES

Federal, State or local law enforcement agencies should secure access to an IBIS instrument through an existing ATF NIBIN partner to have their evidence items and test fires entered into the IBIS using their agencies procedures. If they are unable to locate a NIBIN partner they should contact one of the ATF Forensic Science Laboratories or the ATF NIBIN Branch for assistance in locating a partner agency or directions on submitting the test fires or evidence to an ATF laboratory for entry into IBIS. Any "NIBIN Lead" identified by ATF will be referred back to the submitting agency for microscopic examination.

Submissions to an ATF laboratory will require the requesting agency to make their request for service on agency letterhead which details the type of service they are requesting from the ATF Laboratory. In this case it would be to ask ATF to enter test fires or evidence cartridge cases or bullets into IBIS. This serves as a "contract" between NIBIN Sites Operation Branch and its customer for accreditation purposes. Once the contract is established, test fires must be submitted following the protocols noted below.

The request must be submitted via a traceable shipping method **(e.g.,** Fed Ex), containing the exhibits to be entered, as well as a written request on an **ATF outside**

agency transmittal form NI-03a that contains the following information:

(1) Agency Case #
(2) Agency Name and Address
(3) Agency Exhibit Number
(4) Date taken into custody name and telephone number of person who completed test-fire (if applicable)
(5) Date of Test Fire (if applicable)
(6) Firearm Description, e.g. make, model, serial number/evidence description
(7) Email address of Submitter
(8) Type of case/offense

ROLES AND RESPONSIBILITIES - ATF IBIS ENTRY GUIDELINES

These guidelines outline the protocol for IBIS entry (acquisition and correlation review). The submitting agency will select one of the following methods:

(1) Submit firearms to a NIBIN Partner (State or local crime laboratory) for firearms test fire and IBIS entry. Check with the NIBIN laboratory to see what calibers they accept for entry into the system.
(2) Submit test fires to the ATF NIBIN Sites Operation Branch servicing their area for IBIS entry (recommended method).
(3) If the firearm is submitted through an ATF Agent to an ATF NIBIN Site for "other" standard forensic examination, e.g., fingerprint or serial number restoration, the ATF Forensic Science Laboratory or the NIBIN Site will complete the firearms test fire and IBIS entry, if it has been requested. If test fires were previously submitted to a local NIBIN Partner for entry, a notation needs to be made on the submitting paperwork. If an ammunition magazine is inventoried with a firearm, it must accompany the firearm in order to be test fired.

TEST FIRING PROTOCOL

In general, NIBIN test firing is mandatory for all semi-automatic pistols as well as .22 caliber semi-automatic pistols, .22 caliber semi-automatic rifles, and long guns that utilize handgun ammunition. There may be exceptions to a firearm(s) submission based on recovery date and calibers most prevalent in the shooting crimes in the area of responsibility for the agency.

Test firing of 7.62x39mm and 5.56 mm rifles and all 12 gauge shotguns is at local discretion. Discretion for entry of these firearms can be based on local policies and changing criminal patterns. However, firearms not test fired include revolvers, single shot or bolt action rifles, shotguns in in other gauges, weapons never fired or firearms deemed unsafe, inoperable or incomplete.

Fired ammunition components recovered from a crime scene will be inventoried as evidence. Test fires may be inventoried under the same exhibit number as the inventoried firearm and stored with the firearm. The ATF Forensic Science Laboratory or the NIBIN Site Operations Branch will return the test fires to the submitter for storage. Upon destruction or return of the firearm to the owner, the submitter will notify the ATF NIBIN Site Operations Branch or NIBIN partner that entered the test fires, so a note of the destruction or return can be entered in the IBIS under that case.

Test fires from multiple cases may be shipped together in one convenience container, but must be packaged separately by case identifier with independent requests for processing test fires submitted to an ATF NIBIN partner may require additional paperwork unique to that partner

agency. **EACH FIREARM WILL BE TEST-FIRED TWICE USING RECOMMENDED AMMUNITION** (refer to Attachment I, Standard Protocol for NIBIN Test Fires- Ammunition).

NOTE: Any firearm(s) deemed to be unsafe, inoperable or incomplete should not be test fired.

If a firearm has been seized and has not been sold in commerce it should not be test fired and entered. Examples would be new firearms seized in a gun shop raid or a shipment from a foreign country that is seized by customs as it is being unloaded from a ship.

Any questions concerning this process should be directed to the NIBIN Branch at (202) 648- 7140 or the ATF Forensic Science Laboratory (FSL) in your area. The contact information is:

- FSL – Atlanta IBIS Section Chief Jason Flater, Jason.Flater@atf.gov; (404)315-4614, 2600 Century Parkway, NE, Atlanta, GA 30345
- FSL – San Francisco IBIS Section Chief John Jacobson, John.Jacobson@atf.gov; (925) 364-8430, 355 North Wiget Lane, Walnut Creek, CA 94598
- FSL – Washington IBIS Section Chief Walter Dandridge, Walter.Dandridge@atf.gov; (202) 648-6310, 6000 Ammendale Road, Beltsville, MD 20705

Critical Elements

- Map the property custody process and identify any time and distance obstacles that impede the timely exploitation of information from crime guns and related evidence.
- Balance people, processes, and technology to design a timely, efficient, and sustainable solution for managing and eliminating the gaps that hinder getting evidence from the point of custody to the applicable forensic and analysis units.
- Document the new process and implement it as standard policy.

Key Considerations

- When balancing people, processes, and technology, consider redistributing traditional workloads to prevent bottlenecks at the lab. For example, use crime scene technicians to lift fingerprints and DNA from guns and evidence and conduct test-firing outside the lab.
- Avoid the ping-ponging of evidence between the seizing agency and the lab for comparison callbacks—it wastes time.
- Consider extending the new process to all agencies within the affected crime region.

Summary

The Most Important Thing
Avoid delays in the transfer of evidence and property to the lab, and embed a sustainable solution that meets the timeliness requirements of all of the stakeholders, even if it means changing organizational behavior and procedures.

The Next Step
The next chapter discusses the fundamentals of task number six of *The 13 Critical Tasks*—Assessing and Evaluating Evidence.

TASK 6

Assessing & Evaluating Evidence

Why assess and evaluate evidence?

This task can reinforce the value of taking the presumptive approach by providing an opportunity for the forensic specialist and the investigator to collaborate and exchange timely and valuable information. For example, if a firearm examiner can tell from a quick "first pass" examination of over a dozen fired cartridge cases that two different pistols of the same make and caliber were involved, he or she could inform the detectives at this juncture. Why wait weeks until the lab report is complete to communicate this fact to detectives?

Another example of improved communication at this step could be a scenario in which the detective knows that one of the suspects associated with the seized gun under examination at the lab has strong ties to another region. With this information, the lab would know to query the ballistic database in the other region to learn if the gun in question was used in a crime there.

This juncture could also serve as a decision gate where the facts and circumstances would be compared against a decision matrix to determine the protocols or the next steps to be followed. For example, some labs have a protocol in which, if a set of circumstances are met, the gun in question will be test-fired, entered into IBIS, and queried against the NIBIN database before any additional firearm workups are done.

Also, depending on the best practice adopted, or on a proprietary process that is designed in-house, decisions can be made at this point to prepare for the upcoming test-firing and acquisition processes. For example, consider a firearm that has arrived at the lab for test-firing. With submitted items in hand, the examiner can begin to make decisions as to which type of ammunition to test-fire with. If the firearm was loaded at the time of seizure and those cartridge cases

were submitted along with the firearm, the examiner may choose to select the same type of ammunition for test-firing; the probability exists that the same type of ammunition would have been discharged from that gun during the commission of a crime. If no ammunition accompanied the gun, the examiner may then need to fall back on a protocol calling for a preselected standard type of ammunition to be used.

This juncture is also an opportunity for program integration with other forensic disciplines, crime gun tracing activities, and serial number restoration programs. It is also a good time to revisit the possibility of the presence of trace evidence (e.g., paint) on the submitted exhibits and how it will be collected and processed. Overall, this task provides an opportunity to fine-tune the presumptive approach as necessary by identifying potential bottlenecks, based on the facts at hand, and call for change in order to optimize the remainder of the processes associated with this critical task.

Recommended Best Practices

The *New Jersey State Police Crime Gun Protocol* follows courtesy of NJSP Forensic & Technical Services.

New Jersey State Police Crime Gun Protocol

Forensic & Technical Services - Analysis of Crime Guns

Through the Rapid Assessment in NIBIN protocol (RAIN), the New Jersey State Police Ballistics Unit has created the capability to assess each case for evidence suitable for NIBIN entry and insure the timely submission into NIBIN. Since its beginning in April 2014, the RAIN protocol has realized its goal of a 24 hour turnaround time for priority cases and has yielded a significant amount of positive NIBIN correlations that have resulted in leads and arrests for investigators. Building upon the success of the RAIN protocol, the Forensic Investigations Bureau has implemented a Crime Gun Protocol which provides for a thorough forensic examination of every crime gun before the gun is test-fired for NIBIN entry. The objective of the Crime Gun Protocol is to provide timely, actionable, leads to investigators while supporting aggressive enforcement and prosecution of gun crimes in New Jersey. Public Law 2013, Chapter 162 requires police agencies to submit gun crime information into systems such as NIBIN, CJIS, and E-Trace in a timely manner. This protocol allows the New Jersey State Police to comply with the statute, in both practice and spirit, while maintaining the highest standards of forensic analysis.

Definitions

Ballistic Evidence (or Firearms and Firearms Related Evidence): This includes firearms, rifles, shotguns, machine guns, live cartridges, projectiles and projectile fragments, discharged cartridge casings, and any parts thereof.

Crime Gun: Any firearm illegally possessed or used in a crime.

Found Gun: Any gun discovered with no apparent owner, or abandoned on either private or public property.

Background

As the RAIN protocol progressed, the Forensic Investigations Bureau recognized the importance of identifying and preserving potential forensic evidence associated with crime guns. Through the RAIN protocol, many recovered firearms which were not initially believed to have been involved in a violent crime, were identified as either murder weapons or weapons used in non-fatal shootings. With the evidential value of these guns increasing with each NIBIN hit, the demand for forensic analysis also

increased. However, once the crime guns were test-fired, potential evidence such as DNA, latent fingerprints, or trace evidence, was unable to be recovered. It was recognized that a timely, thorough, forensic analysis of crime guns, prior to entry in NIBIN, was necessary . To address this need, the Crime Gun Protocol was created.

Implemented on January 20, 2015, the Crime Gun Protocol draws on resources from the New Jersey State Police Crime Scene Investigations Units (South, Central, North) and the New Jersey State Police Forensic Photography Unit to examine crime guns for evidence prior to subjecting them to the RAIN process.

Crime Gun Protocol Procedures

- Crime guns and found guns submitted to the New Jersey State Police Ballistics Unit will be submitted at the Hamilton Technology Complex or one of the regional submission locations (NJSP Totowa HQ and NJSP Buena Vista HQ).
- Upon arrival at the Hamilton Technology Complex, submitted firearms will be received by the Ballistics Unit evidence handlers and assigned a ballistics laboratory number. A member of the Ballistics Unit will check each firearm and confirm it is unloaded and safe to handle. Each gun will be handled with proper precautions to safeguard potential evidence to include DNA, latent fingerprints, trace evidence, and biological evidence.
- Crime guns and found guns will then be turned over to a member of the Crime Scene Investigation Unit (North, Central, or South). A member of the Crime Scene Investigation Unit - North, Central, or South, will be assigned to the Hamilton Technology Complex daily from 8 a.m to 4 p.m.
- The crime scene detective will conduct a visual and microscopic examination of the weapon, including the outside and inside of the barrel, for the presence of biological material, fibers, hair, or anything of evidential value. This may include the use of an alternate light source.
- Each firearm will undergo a latent fingerprint analysis (either dusting or fuming method), unless this test has already been conducted and/or the submitting agency specifically requested this exam not be performed.
- Unless requested not to do so by the submitting agency, the crime scene detective will collect epithelial swabbings (or "E-swabs") from the firearm for potential DNA submission at a later date. The swabbings will be collected in accordance with current specifications and guidelines provided by the Office of Forensic Sciences. The swabbings will be packaged by the crime scene detective, labeled, and entered into the LIMS system. It should be emphasized

that this step in the process requires only the collection of swabbings, thus creating the capability to request DNA analysis at a later date, if warranted. This protocol does not include DNA analysis of every crime gun. The swabbings will be turned over to the evidence reception personnel at the Central Laboratory for either submission to the DNA Unit for analysis or for return to the submitting agency. In instances where the evidence has been pre-approved for DNA analysis by the Office of Forensic Science, the crime scene detective will collect the swabbings in accordance with this protocol and turn the swabbings over to the Central Laboratory for DNA analysis.

- Weapons that display an altered, defaced, or obliterated serial number will then be turned over to the Forensic Photography and Composite Artist Unit. These weapons will be photographed to document the alterations to the serial number, prior to the serial number restoration process by the Ballistics Unit. Weapons that do not have an altered, defaced, or obliterated serial number will be returned directly to the Ballistics Unit for assessment into NIBIN (RAIN). The assigned crime scene detective will complete a Crime Gun Analysis Report (sp form 308b) for each case. A completed report will be forwarded to the Ballistics Unit for inclusion in the case file.

- Each weapon will be assessed by the New Jersey State Police Ballistics Unit's NIBIN Coordinator or his/her designee for submission in NIBIN. Priority will be assigned based on the probative value of the potential NIBIN information, in accordance with existing RAIN protocol.

- Unconfirmed, or potential NIBIN "hits" will be communicated, via email, to the "NIBIN Alert" distribution list. Any potential NIBIN hit is for investigative lead purposes only.

- In instances where a potential NIBIN hit is reported, DNA analysis may be requested when there is probative value to such testing and with the approval of the Office of Forensic Sciences DNA Unit. This request is to be made by the submitting agency directly to the Office of Forensic Sciences.

In the event a positive finding is made at any point in the forensic analysis process, the crime scene detective shall proceed in accordance with existing policies and procedures regarding proper collection and preservation of forensic evidence.

Effective: January 20, 2015

Tentative Results Using Scientific Technology (TRUST): Los Angeles Police Department

The LAPD Firearms Analysis Unit developed a unique approach to providing preliminary and timely information to investigators called Tentative Results Using Scientific Technology (TRUST). Investigators are provided with information based on IBIS correlation scores and visual on-screen examinations by firearm examiners as to probable but unconfirmed evidence links at that point in time. The information is carefully and clearly qualified as non-conclusive.

Typically, the way that TRUST works is that investigators are given a degree of probability that two gun crimes may be linked, and then they look for other information known to be true for both incidents to establish a connection. For example, investigators are told that there is a probability that crime A and crime B are linked by the same gun. In crime A, a man was shot by a robber and lived. In crime B, two suspects were arrested for illegal gun possession. Investigators use data other than the firearm data to establish a connection between the two crimes and solve crime A. They show photos of the arrested persons in crime B to the victim of the robbery and shooting in crime A. The victim identifies one of the men in the arrest photos as the person who shot him. An arrest warrant is obtained based on the statement and identification by the victim. The ballistic evidence never came into play.

The LAPD TRUST program, operating in conjunction with their Walk-in Wednesday program, has proven very effective in helping them to deal with the high levels of gun- and gang-related violent crime.

ATF NIBIN National Correlation and Training Center (NNCTC)

The NNCTC, on the basis of a request for assistance by the appropriate ATF Field Division Special Agent in Charge (or their Designee), enters into a formal agreement (MOU) to perform correlation reviews on all ballistic evidence entered into NIBIN by the NIBIN Partner Site requesting assistance. The NNCTC provides documentation of the NIBIN Leads or Negative results to all affected parties within 24 to 48 hours. ATF defines a NIBIN Lead as:

> *"An unconfirmed, potential association between two or more pieces of firearm ballistic evidence based on a correlation review of the digital images in the NIBIN database by either a firearms examiner or a trained NIBIN technician. A NIBIN Lead is intended to provide a lead for investigative purposes."*[41]

41 Bureau of Alcohol, Tobacco, Firearms and Explosives. *Minimum Required Operating Standards For National Integrated Ballistic Information Network (NIBIN) Sites*. 2018. Provided courtesy of the ATF NIBIN Branch, December 20, 2018

The NNCTC reviews the top 50 IBIS system correlation results for every case. This standard was established after consulting published articles on the subject and after conduction research and discussions within the NIBIN community. The NNCTC will increase this threshold as warranted.

NIBIN Leads can greatly aid the timely advancement of an investigation. When it comes to presenting the results of a NIBIN Lead in court, additional examination steps would be required by a qualified firearm examiner. Should the examiner's opinion be that two (or more) NIBIN exhibits match (i.e., they are fired from the same gun), the Lead would then be considered a **NIBIN Hit**. NIBIN Hits will be discussed in more detail in Task 10—Confirming Hits.

Rapid Assessment for IBIS Selection Examination (RAISE): Ontario Center of Forensic Science (CFS)

The Ontario Center for Forensic Science (CFS) designed a protocol to strike a balance between the need to quickly generate investigative leads in shooting investigations and the need to conduct thorough forensic analysis in cases that are already bound for court. It involves a speedy "go straight to IBIS" procedure for certain situations where very little information is known. In other words, RAISE is used to ferret out valuable crime solving information from seemingly insignificant data. This is how it works:

To conduct preliminary examinations on fired ammunition components submitted under the Rapid Assessment for IBIS Selection Examination (RAISE) initiative for the purposes of:

- Selecting representative items for submission to the IBIS Unit at CFS for upload to the Canadian Integrated Ballistics Identification Network (CIBIN) database.
- Identifying linkages to other shooting occurrences/recovered firearms.

Items submitted for examination under the RAISE initiative must meet the following requirements:

- No accused/suspect has been identified.
- Only fired ammunition components (bullets and cartridge cases/shot shells) are to be examined.
- The occurrence is not a homicide.
- The requested examination is to determine whether the submitted items are linked to another shooting occurrence/recovered firearm (there is no request to know the caliber, type or number of firearms that discharged the fired ammunition components).
- No specific cross-reference is requested.

A full examination will not be conducted and a report will not be issued for items submitted under the RAISE initiative. A letter will be issued to advise the submitting agency that following a preliminary examination representative item(s) have been selected and transferred to the IBIS Unit for upload to the CIBIN database.

Suspicious Firearms Index (SFI): Ontario Center of Forensic Science (CFS)

The SFI initiative has been implemented to enable police agencies to determine whether a seized/recovered firearm is linked to a shooting occurrence through the upload of test-fired ammunition components to the CIBIN database. All SFI cases are conducted by the IBIS Unit of the CFS. Submissions under this initiative consist of either a seized/recovered commercial firearm or agency generated test-fired ammunition components.

Items submitted for examination under the SFI initiative must meet the following requirements:

- One firearm per submission (or test-fired ammunition components from one firearm).
- The firearm is in firing condition or may be easily restored to firing condition.
- The requested examination is to determine whether the firearm is linked to another shooting occurrence - no other examination is requested and classification of the firearm must be done by the police agency prior to submission.
- No specific cross-reference is requested.
- The firearm has been commercially manufactured: no improvised firearms (including homemade firearms and drilled-out starters pistols/revolvers), pellet or flare guns will be accepted.

NIBIN First: New York Police Department

To reduce and prevent ballistics case backlogs, the NYPD enacted a policy which in effect uses NIBIN to prioritize the unit's case work. When fired-bullet and cartridge case evidence comes into the lab, the evidence is immediately entered into IBIS and searched through the NIBIN network. The evidence is then resealed and stored. The result of the IBIS search determines which evidence gets priority for further workup.

First Things First: Newark NJ Police Department

First Things First is a work philosophy employed by the *Newark Police Department's Ballistics Lab* that focuses all resource efforts toward the most important thing – the dissemination of crime gun intelligence to investigators. As each firearm comes into the Newark Ballistics Lab the first order of business is to test-fire it and enter the test-fires into NIBIN using BRASSTRAX™. As fired evidence comes into the lab, the first order of business is to screen the exhibits to determine if they have been fired from the same firearm and select the exhibit bearing the best markings for entry into NIBIN using BRASSTRAX. If the case involves multiple exhibits, some with brass primers, and others with nickel primers the lab will select two exhibits for entry into NIBIN: one with a brass primer and one with a nickel primer. There are three firearm examiners assigned to the Newark Ballistics Lab and one trainee. They have no ballistics evidence backlogs as all evidence and test-fires are processed through NIBIN with a 24 hour period – most often during the same day. When asked about their sustainable success, the lab credits their *"First Things First"* philosophy, the use of quick fill forms, their email system of disseminating Hits, and some of their unique processes like their *"spread it all out on the floor"* to a better type of process. For more information about *First Things First,* you can contact the Newark Police Department's Ballistics Laboratory.

Color-Coded Ammunition: Trinidad and Tobago

The government of Trinidad and Tobago color codes the ammunition destined for military, police and civilian use. Fired ammunition found at crime scenes is readily identifiable as originally intended for one of those three groups. This information may have strategic value in analyzing patterns and trends, especially if one type of ammunition is turning up in unexpected places.

Exhibit Screening Protocols

The following protocol represents a conglomeration of various common practices and helpful hints for screening and triaging exhibits gathered from a number of IBIS clients around the world.

- Determine the number of firearms involved.
- Screen by caliber, class characteristics, and individual markings, selecting a representative sample of bullets for each of the firearms identified in the screening process.
- Screen by manufacturer of ammunition, bullet design (flat base, boat tail, concave base, etc.) and material (lead, copper, brass, nickel, steel, etc.).
- If all are from the same manufacturer, bullet design, and material, and are equal in the quality of markings, then one may be chosen for entry into IBIS.
- If more than one manufacturer, bullet design, or material is represented, even if the quality of the markings is equal, consider entering a representative sample for each variation.
- If the bullet bearing surface is damaged, or if the bullet is fragmented, consider entering enough of the damaged or fragmented bullets to equal the number of land engraved areas (LEAs) that would be present on a pristine bullet, or as many LEAs as are available.
- Select a representative sample of cartridge cases for each of the firearms identified in the screening process.
- Screen by manufacturer of ammunition, primer size, design (hemispherical vs. flat, etc.), material (brass, nickel, steel, etc.), lacquered vs. non-lacquered, and the similarity of marks.
- If all are from the same manufacturer, primer size, design, material, with all lacquered or all non-lacquered, and equal in the quality of markings, then one may be chosen.
- If more than one manufacturer, primer size, design, or material is represented and even if the quality of the markings is equal, consider entering a representative sample for each variation.
- If there is a variation in markings, such as drag marks present on some but not all, or primer flow back present on some but not others, consider entering a representative sample for each variation in the markings.

Critical Elements

- Create an early opportunity for the forensic specialist and the investigator to collaborate and exchange timely and relevant information order to fine-tune and help optimize the remainder of the processes for this critical task.
- Establish a decision matrix against which facts and circumstances can be compared in order to determine the protocols or next steps to be followed for a given case (e.g., additional forensic analysis, scope of correlation, selection of test-fire ammunition, crime gun tracing, etc.).

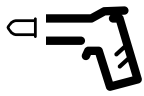
Key Considerations

- Exchange the preliminary information between the investigator and the forensic specialist.
- Review the best practices for adoption regarding such items as establishing examination priorities, dealing with multiple pieces of evidence from the same case, communicating preliminary information of value to investigators in a timely manner, and determining the scope of IBIS correlation requests.

Summary

The Most Important Thing
Exchange information between the investigator and the forensic specialist, in a collaborative manner, early in the examination process to allow the forensic specialist to provide preliminary information in a timely manner and identify processing bottlenecks that cause delays and take corrective action.

The Next Step
The next chapter discusses the fundamentals of task number seven of *The 13 Critical Tasks*—Test-Firing.



TASK 7

Test-Firing

Why test-fire?

From the *Association of Firearm and Tool Mark Examiners (AFTE) Glossary*, test-firing is "The term used to designate the actual firing of a firearm in a laboratory to obtain representative bullets and cartridge cases for comparison or analysis". Because differences in the hardness, shape, and size of certain ammunition components can impact firearm examination, test-firing becomes an integral part of the automated ballistic identification process. It also helps to ensure the safe collection of the most appropriate exhibits for comparison.

It would be very advantageous to have the test-fire ammunition selection criteria in place at the outset of a ballistic identification program, in order to avoid delays in obtaining the best suited ammunition.

In an effort to redistribute workloads, the test-fire task can be fairly easily shifted to various suitable locations outside of a lab and can be accomplished by people other than forensic experts. The redistribution of workloads can help prevent bottlenecks and evidence processing delays. Delays are dangerous because it takes longer to identify armed criminals, leaving them free to cause more harm. This problem is compounded by the fact that a gun that is taken into custody by police with no readily apparent connection to a murder or other serious crime will most often fall to the bottom of the lab's case work priority list. Experience has proven that these seemingly insignificant guns can become major factors in breaking a murder case or series of cases wide open. All crime guns that are taken into custody should be test-fired in a timely manner in order to keep step with the presumptive approach and the balancing of people, processes, and technology.

Using trained police officers and crime scene technicians outside of the lab environment to test-fire guns to obtain bullet and cartridge case test-fire samples is a great example of balancing the people part of the three-legged stool.

This practice is being done in many places successfully. Removing the test-fire workload requirement from the shoulders of the forensic experts working in the lab frees more of their time for conducting examinations.

Establishing a protocol to test-fire only certain specified types of guns seized by the police, thereby narrowing the field, can be a method of balancing the processes part of the three-legged stool. The criteria should be based on focusing efforts on the types of guns that are most often used in crimes within a particular region. Test-firing only specific types of guns can prevent wasting time and resources on firearms that are unlikely to ever be used in crimes. However, deliberation and care must be exercised so as not to unwisely narrow the scope of ballistics data collection for Crime Gun Intelligence.

For example, for many years now, ATF's NIBIN Program has been primarily focused on the comparison of expended cartridge case evidence collected at crimes scenes and test-fired cartridge cases from recovered crime guns. In light of this, the Minimum Required Operating Standards For National Integrated Ballistic Information Network (NIBIN) Sites[42] direct that:

> *"In general, NIBIN test-firing is required for all semi-automatic pistols including .22 caliber, .223 and 7.62 semi-automatic rifles, 12 gauge shotguns and long guns that use handgun ammunition under the aforementioned guidelines. There may be exceptions to a firearm's test-fire submission; firearms that are not typically test-fired include revolvers, single shot or bolt-action rifles, shotguns in other gauges, weapons never fired, or firearms deemed unsafe, inoperable, or incomplete."*

And police in Palm Beach County, Florida, have purchased portable test-fire bullet trap systems which allow for the safe discharge of a firearm and the collection of the fired ammunition components outside of the lab environment. This is a great example of how to balance the technology part of the three-legged stool.

42 Bureau of Alcohol, Tobacco, Firearms and Explosives. *Minimum Required Operating Standards For National Integrated Ballistic Information Network (NIBIN) Sites*. 2018. Provided courtesy of the ATF NIBIN Branch, December 20, 2018

Recommended Best Practices

Safety First: Maintain a Safe and Uncontaminated Environment

Firearm Safety

Everyone working in a firearm identification unit should be required to attend and pass an accredited firearm safety class. All firearms should be kept with the bolt open, slide back, or cylinder held open with a plastic cable tie or other device to render the firearm inoperable. Firearms should only be loaded at the firing range or in the bullet recovery room. When test-firing, never load more than one cartridge into the magazine, clip or cylinder at a time. Never test-fire a firearm alone; be accompanied by an observer. Wear safety glasses when test-firing. The plastic cable tie or other safety device should be replaced before leaving the firing range or bullet recovery room with a firearm. No ammunition, other than evidence, should be allowed at an examiner's workstation. Accidents happen, have a Red Cross approved first aid kit with an assortment of bandages including large sterile pads.

Environmental Safety

All personnel should be vaccinated against hepatitis A, B, and tetanus. All bullets and bullet fragments should be soaked in a bleach and water solution before examination. When examining evidence, always wear plastic gloves and safety glasses. When examining clothing, wear plastic gloves, a respirator, and safety glasses. Any work dealing with chemicals should be performed under a fuming hood, and a respirator should be worn. All chemicals should be stored in an approved closet. Your work area should be covered with new paper (butcher or wrapping paper). Never eat at your workstation. Never store food in a refrigerator that is used for the storage of evidence. Wash your hands frequently.

A Common Approach to the Selection of Test-Fired Ammunition

- If a firearm submitted for examination contained ammunition when it was taken into custody, test-fire it using the same brand and type of ammunition.
- If a firearm submitted for examination contained no ammunition when taken into custody, test-fire it using the ammunition identified according to an established protocol based on:
    - The makes and types of ammunition most commonly encountered in the legitimate market in the region.

    or
    - The makes and types of ammunition most commonly encountered in crimes in the region. IBIS data can be reviewed to identify ammunition patterns and trends.
- Select a number of ammunition types that are commonly used and found during criminal acts in your area. These will be the test standards.
- Select a number of crime guns that are common in your area and test-fire them using the previously identified ammunition.
- From the recovered test-fires, visually compare all the samples and narrow the selection to three categories based on the quality of markings left on the fired ammunition components:
    - Category One: should be the ammunition that marks the best.
    - Category Two: should be the ammunition that marks the worst.
    - Category Three: should be the ammunition that marks in between the best and worst.

Note: In a networked system where correlations will occur between one site and another, the various sites should use a test-fire protocol that uses the same brands of ammunition. This ensures consistency across sites.

Dealing With Brass and Nickel Primers: South African Police Service

The South African Police Service (SAPS) reports that they frequently encounter ammunition used in crimes which contains either brass or nickel primers. These types of primers mark differently due to the composition of the different metals. In order to optimize correlation performance when dealing with different ammunition types and materials, this best practice involves a test-firing protocol in which three test-fires are taken using three types of ammunition. It establishes a probability as to the boundaries in which most ammunition in the region would fall. The protocol requires that every firearm is test-fired using each of the three categories of ammunition.

ATF Ammunition Selection Protocol for NIBIN/IBIS Test-Firing[43]

Standard Protocol for IBIS Test Fires - Ammunition to Be Used

This document specifies the ammunition to be used for all test fires being entered into IBIS (Integrated Ballistic Identification System). These specifications are based on tests to date, and firearm examiner experience.

In cases where the ammunition used by a suspect is known, additional test fires may also be made using like ammunition. The first test fires should be with the same brand of ammunition that the suspect was known to have and then test fired using the protocol ammunition.

Autoloading Firearms

Autoloading firearms should be test fired a minimum of two (2) times with jacketed ammunition (specific calibers and manufacturers listed below[1]).

Rationale

1. The ammunition listed was chosen because it has bullet expansion qualities and case hardiness that maximize the potential for reproducing marks from the firearm barrel and action.

2. Two test fires are needed in each medium to ensure reproducibility from the firearm and to allow the best test fire to be entered into IBIS.

3. Different metal surfaces receive the marks from the firearm in different ways. Both jacketed and lead test fires are needed to give IBIS and examiners the best opportunity for making a match.

IBIS Ammunition Protocols 2006
ATF Laboratory

[1] CCI = Cascade Cartridge Industries; FMJ = Full Metal Jacket (Copper); R-P = Remington Peters; PMC = Eldorado Cartridge Corporation - a subsidiary of Pan Metal Corporation

43 Bureau of Alcohol, Tobacco, Firearms and Explosives. *Standard Protocol for IBIS Test-fires – Ammunition to be used*. Provided courtesy of the ATF NIBIN Branch on January 18, 2019.

Types of Ammunition to Use for Test Fires

.22 caliber	**Remington** .22 Standard Velocity Lead Round Nose **CCI** .22 Mini Mag Copper Coated Round Nose
.25 auto	**Remington, PMC, UMC** 50 grain metal case, FMJ
.32 auto	**Remington,** UMC, or **PMC,** FMJ
.380 auto	**Remington** or **PMC** 95 Grain FMJ UMC 95 grain metal case
9mmLuger	**Remington** or PMC 115 grain FMJ (based on ATF FSL testing) or 115 Grain R-P FMJ UMC 115 grain metal case
9mmMakarov	CCI 95 grain FMJ (Note... check availability, Not listed 2000 CCI/Speer catalog) **Federal** 90grain JHP
.357 Sig	**Remington** 125 grain JHP UMC 125 grain metal case **Federal** 180 grain FMJ
.40S&W	**Remington** 180 grain JHP **Federal** 180 grain JHP UMC 180 grain metal case
10mm	**Remington** 180 grain JHP **UMC** 180 grain metal case **Remington** 200 grain metal case **PMC** 200 grain metal case

IBIS Ammunition Protocols 2006
ATF Laboratory

March 13, 2015
Appendix B

Types of Ammunition to Use for Test Fires

.45 auto	**Remington** or **PMC** 230 grain metal case **UMC** 230 grain metal case
7.62x39mm	**Remington Jacketed Soft Point (JSP)**
.223Rem	**Remington, Jacketed Soft Point (JSP)**
.22 .12 gauge	**Remington, Mohawk** **Premier, 2 ¾ x2¾-11/8 Oz. #8**

IBIS Ammunition Protocols 2006
ATF Laboratory

March 13, 2015
Appendix B

The NIBIN Squad: Phoenix Police Department

In conjunction with the Crime Lab, the Phoenix Police Department's Violent Crimes Bureau, NIBIN Squad, enters crime scene evidence cartridge cases and test-fires into the NIBIN database. Below are some examples of the NIBIN Squad protocols:

- *"Does the evidence need to be processed for DNA and/or prints, or is a function test necessary? If the answer is "yes", the item(s) must be sent to the Crime lab first. Submit a lab request and also request that the item(s) be entered into NIBIN following the processing for DNA/prints/ function test.*
- *If processing of the item(s) by the Crime Lab is not necessary, submit a request to the NIBIN squad to have the item(s) entered into the NIBIN database.*
- *Submit all requests for evidence scene casings and test-fires (semi-auto handguns and long guns) to the NIBIN squad requests address in Outlook.*
- *Complete the NIBIN Request Worksheet word document, save it to your computer and send it as an email attachment.*
- *The NIBIN detective assigned to your case will make a case management entry and supplement your report when the entry has been completed. After making a request, you will normally not be contacted unless a hit is identified. Contact the assigned NIBIN detective should you have any questions.*
- *NIBIN Detectives are assigned to work with specific details: Homicide Unit - Property Crimes Bureau North & South - Assaults Unit - Night Detectives - Auto Theft Unit -Document Crimes Unit - Drug Enforcement Bureau - Family Investigations Bureau - Robbery Unit - Gang Enforcement Unit."*

CBP Begins Ballistic Testing of Seized Firearms in Arizona

"Tucson, Ariz. – For the first time, firearms seized by U.S. Customs and Border Protection[44] agencies in Arizona were test-fired recently for cross-matching through the National Integrated Ballistic Information Network for links to other crime scenes. This coordination effort was conducted through the CBP Anti-Gang Initiative with the Phoenix Police Department, Gun Enforcement Squad.

According to Jeffrey Self, commander of the Joint Field Command – Arizona, this initiative is an example of CBP's commitment to working with state, local and federal law enforcement partners.

"I am proud that CBP has long standing relationships with other law enforcement agencies from the local to federal levels," he said. "If one of these firearms we seized leads to solving an open case and taking a dangerous person off the streets, then all our efforts are worth it.

"We will continue to assist and cooperate with our partners to ensure a safe environment along our borders and in our communities," said Self.

CBP officials transported seized firearms to the Arizona Law Enforcement Academy Firearms Range in Phoenix on Jan. 5, to determine if any of the weapons were used in the commission of a crime. Officials could not release any information about the weapons test-fired due to ongoing investigations but did say any positive match results will be communicated to the appropriate investigating law enforcement agency.

NIBIN was launched in 1990 by the Bureau of Alcohol, Tobacco, Firearms and Explosives and provides a unique opportunity to link cases involving the use of firearms and provide leads that would have otherwise been impossible without this technology.

When an exemplar (pattern) from a test-fire or evidence scene casing is entered into the NIBIN database, it could take as little as an hour or two to get the entry analyzed to see if there are any possible hits. If a possible hit is identified, it is confirmed by a firearms examiner.

It is important to note, according to PPD officials, that once a test-fire or evidence scene casing has been entered and correlated, the image remains in the database and is compared against future entries. So, for a particular entry, even though a hit may not be immediately identified during the correlation

44 U.S. Customs and Border Protection, *CBP Begins Ballistic Testing of Seized Firearms in Arizona*, January 9, 2012, Retrieved from https://www.cbp.gov/newsroom/local-media-release/cbp-begins-ballistic-testing-seized-firearms-arizona (October 2013).

process, there is thepossibility for that entry to hit against future entries days, weeks, months or years later - which is often the case.

According to information published in a PPD brochure on NIBIN, something as minor as criminal mischief could lead to solving a cold case murder. Sometimes suspects are eliminated and there are no positive leads, however, one expended casing or test-fire from a found gun could later produce a lead. A dozen police departments in the Phoenix metro area participate in the NIBIN program.

Four agencies in the Phoenix metropolitan area operate Integrated Ballistic Information System units: PPD, Arizona Department of Public Safety, Maricopa County Sheriff's Office and Mesa Police Department. CBP plans to participate and will conduct future ballistics testing."

Open Test-Fire Shoots: Indiana State Police

The Indiana State Police Ballistics Unit periodically hosts "Test-fire Shoots" at a local gun range providing police agencies the opportunity to bring their seized firearms to the range and have them test-fired according to established protocols, with the assistance of personnel from the State Police Lab.

Security Industry Test-Firing (SITF) Program: New South Wales Police Department

In May 2003, police in New South Wales, Australia, began a ballistic testing program for handguns in accordance with legislation requiring the State's private security service agencies (e.g., armed guards and cash couriers) to submit their firearms for testing. The legislation creating the program called the Security Industry Test-Firing (SITF) Program was passed in response to what law makers viewed as an alarming and rising trend in crime directed at the security industry. Security agencies were being targeted for the firearms that they possessed as well as for the money they guarded. Criminals had come to view security agencies as a source of handguns, since national restrictions prevented general public access to handguns. The law requires that all security industry handguns be submitted to the New South Wales Police for identification and record keeping. In addition, a sample test-fire from each gun is imaged and stored in a database for later cross-checking with ballistic evidence found at crime scenes. IBIS technology is used by the SITF Program for ballistic imaging and comparison.

The program has demonstrated that it can track security agency firearms that are used to commit serious crimes, such as armed robbery, assault, and murder, and that it could provide tactical and strategic intelligence of value to deal more effectively with the problem in New South Wales. New South Wales Police have used the SITF Program and IBIS technology to alert them when a security-agency-

owned firearm was used in a crime, to track the gun's repeated use without having to wait until it was recovered, and to identify recovered crime guns as stolen security agency firearms despite the fact that the identifying serial numbers had been obliterated. The program has been effective in providing police with unique and valuable information of both a tactical and strategic nature. Tactically, the program helps investigators leverage the information known about the linked cases in order to develop new leads and advance their investigations. Strategically, the program helps crime analysts to identify patterns and trends associated with the diversion of guns to criminals, so that policy makers can develop new strategies and tactics to combat urban gun violence.

Stolen Firearms Lookout Programs

Some police agencies in a number of countries test-fire their own firearms and the firearms of other government agencies. Some agencies, like those in the United States, keep the test-fires stored and filed. In the event that a particular firearm is stolen, the test-fire is removed from storage and entered into IBIS for tracking. Other countries actually enter the test-fires into IBIS at the outset to help detect improper use, theft, and diversion.

Critical Elements

- Establish firearm safety and anti-contamination protocols for test-firing.
- Establish ammunition selection protocols for test-firing.
- Ensure that a timely and sustainable process is in place for making the test-firing of guns seized by police a priority, including those that have no readily apparent connection to a murder or other serious crime.

Key Considerations

- Prepare for the execution of the test-fire protocols well in advance (identify and procure test-firing supplies and bullet trap systems, etc.).
- Avoid delays and backlogs—consider redistributing workloads to help maintain priorities by balancing people, processes, and technology.
- Communicate the protocols and provide the required training.

Summary

The Most Important Thing
Establish a process to ensure the safe collection of test-fired exhibits, and to select ammunition materials which can optimize the IBIS automated correlation process.

The Next Step
The test-fire process is a critical to linking a seized firearm to a crime or series of crimes. The next step is to acquire an IBIS image. The next chapter discusses the fundamentals of task number eight of *The 13 Critical Tasks*—Acquiring Images of Fired Ammunition Components.

TASK 8

Acquiring Images of Fired Ammunition Components

Over the last century, the use of forensic ballistics to help solve crimes has essentially been a manual process using optical comparison microscopes.

Current trends point to three-dimensional digital imaging as the key to making significant improvements in the field of forensic ballistics. Ultra Electronics Forensic Technology shares this view and continues to evolve its IBIS technology to provide effective solutions, combining high-definition sensors, automation, and matching algorithms. The latest generation of IBIS products offers a highly automated and comprehensive way of imaging fired ammunition components in high-definition 2D and 3D.

IBIS uses specialized 3D microscopy to capture the unique marks left by firearms on fired bullets and cartridge cases. The IBIS correlation algorithms reveal the most likely matches within IBIS networks that can span multiple jurisdictions with access to millions of bullets and cartridge cases. Top search results are ranked in order of similarity, and virtual microscopy can be used to compare surface details in high-definition 3D.

NOTE: The data and claims contained in this chapter have been provided by Ultra Electronics Forensic Technology Inc. which vouches for the accuracy and veracity of the information contained herein.

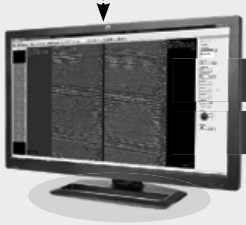
COMPONENTS

Capture
BRASSTRAX

Capture
BULLETTRAX

Manage Data
Data
Concentrator

Compare
Correlation
Engine



Review Results

Identify Matches

MATCHPOINT

Communicate
HIT VIEWER

VISIONX

The IBIS architecture uses a modular approach with distinct components for acquisition, storage and management, comparison processing, and analysis. This approach offers flexible deployment options and scalability to adapt to each agency's needs.

The high level of automation in IBIS and its ease-of-use make it accessible to a broader range of users. Minimal training is required to achieve proficiency to operate acquisition and analysis stations, so they can be operated by people other than expert firearm examiners. Therefore, ballistic evidence collection workloads for IBIS networks can be better balanced—the firearm examiners can then be free to focus on work requiring their expert skills. This also makes IBIS more accessible and easier to expand to police agencies where there are no firearm examiners. Better accessibility allows IBIS data acquisitions to be performed closer to the sources of crime evidence collection. This not only reduces processing time, but increases the turnaround time for lead generation.

An example of optimization is the NIBIN National Correlation and Training Center (NNCTC) where ATF provides dedicated resources who review correlation results for acquisitions by state and local law enforcement agencies. The centralized correlation review services provided by the NNCTC make it possible for police departments to acquire their firearm evidence without having to allocate specialized resources to review the ensuing correlations. And, they don't have to depend on a local or state laboratory to provide this service in a timely manner. This approach allows the delivery of investigative leads within 24 to 48 hours.

Extended Reach

A permanent IBIS acquisition station may not always be practical at all locations, and the transfer of evidence to a processing location can sometimes be problematic. However, keeping the goal of comprehensive collection in mind, transportable acquisition stations and vehicle-mounted units may provide more flexible deployment options.

The transportable acquisition station is a modified BRASSTRAX™ unit that can be safely transported and easily deployed, to start up a new site, or temporarily add equipment to an existing site to help deal with evidence backlogs.

The vehicle-mounted solution includes one or more acquisition stations and possibly an analysis station. These are installed in a specialized vehicle, which can be driven to locations where evidence is to be acquired. Additional equipment can be included in an attached trailer, such as a bullet-recovery device to test-fire firearms.

The modularity of IBIS components allows an IBIS network to overcome time and distance barriers by connecting remote sites and thereby extending its reach. On NIBIN, the use of wireless routers to connect to JUTNet further allows for flexibility and timeliness of installations and movement of the equipment to new sites. This results in the efficient processing of evidence by enabling various agencies to quickly submit exhibits into IBIS from various remote locations close to the sources of evidence.

Higher Image Quality Increases Success Rate

IBIS automation ensures consistent levels of high quality data collection by reducing operator variance. On the input side, it promotes uniformity and standardization. On the output side, it produces optimal comparison results. It only takes a few minutes to set up a bullet or a cartridge case for acquisition. Once started, the actual image acquisition process is fully automated which frees up the operator for other tasks.

Dr. Anthony A. Braga (Harvard University) and Dr. Glenn L. Pierce (Northeastern University) studied the impact of 3D imaging technology on the productivity of the Boston Police Department's Ballistics Unit in making bullet matches:

> *When directly compared with 2-D imaging technology, we find that the 3-D imaging technology acquired larger amounts of crime bullet evidence and was associated with a nearly fivefold increase in the cold bullet matches by the Ballistics Unit. Interviews with Boston Police detectives confirmed the considerable investigative value of the cold bullet matches.*[45]

In taking the presumptive approach to the investigation of crimes involving the misuse of firearms, good quality image data must be collected from fired bullet and cartridge case specimens in order for the best possible data to be extracted from the automated ballistic imaging process. Its high quality imaging capacity, automated processing features, and modular architecture, make IBIS particularly valuable in facilitating the design of new and innovative work processes. This will allow users to break free from traditional boundaries, extend the reach and range of the technology, redirect workloads, and help reduce case backlogs.

45 Anthony A. Braga and Glenn L. Pierce. *Reconsidering the Ballistic Imaging of Crime Bullets in Gun Law Enforcement Operations*, Forensic Science Policy & Management: An International Journal, 2:3, (2011) 105-117.

Recommended Best Practices

Proficiency Testing

Administered at the lab site, proficiency testing is sometimes done one month after the completion of one of the Ultra Electronics Forensic Technology basic User course. If a user fails, FT recommends that the user work with a mentor for a period of one month before retaking the test. A proficiency test should be administered once a year to all IBIS users in order to realize the following benefits:

- Standard data quality throughout the network
- Adherence to acquisition protocols
- Confirmation to section supervisors and lab directors regarding personnel efficiency
- Satisfaction to operators after having been certified by a world recognized company

Routine Review of IBIS Images and Case Information

The implementation of a peer review process (informal or formal) is encouraged. One approach is to have another technician or examiner review an IBIS acquisition using the validation screen before it is submitted for correlation. The review should include both image quality (position, orientation, outlines, etc.). and case information (date, event type, and originating agency, etc.). While performing IBIS result review and image comparisons, operators may encounter errors relative to a case or exhibit that should be noted in the log for quality follow-up and correction. Continuous follow-up and reinforcement by an assigned site administrator can be an effective means of quality control.

IBIS Proficiency Test

Proficiency Testing is currently available as a feature in BRASSTRAX and can be used as a standardized annual proficiency test for acquisitions. The Proficiency Test makes it possible for BRASSTRAX trainers to evaluate students after they have received acquisition training and for students to perform self-evaluations. The Proficiency Test uses a standardized methodology that provides accurate and objective results by evaluating the quality of region of interest acquisitions and exhibit information. The Proficiency Test can also be used as part of a Quality Assurance program.

The Proficiency Test is used to evaluate the acquisition of centerfire and rimfire cartridge cases. It tests six steps of a student's acquisition against a controlled reference exhibit. The same exhibit must be acquired as perfectly as possible.

The Proficiency Test is run directly from BRASSTRAX. The test and reference exhibits must both be stored on the same BRASSTRAX Acquisition Station. If the acquisition station is synchronized to a Data Concentrator, the Proficiency Test can also be run from the MATCHPOINT Analysis Station, in which case the exhibits can come from different Acquisition Stations.

The Proficiency Test evaluates the exhibit set as the proficiency test exhibit against the exhibit set as the proficiency reference exhibit, and generates a report based on the results.

Bracketing

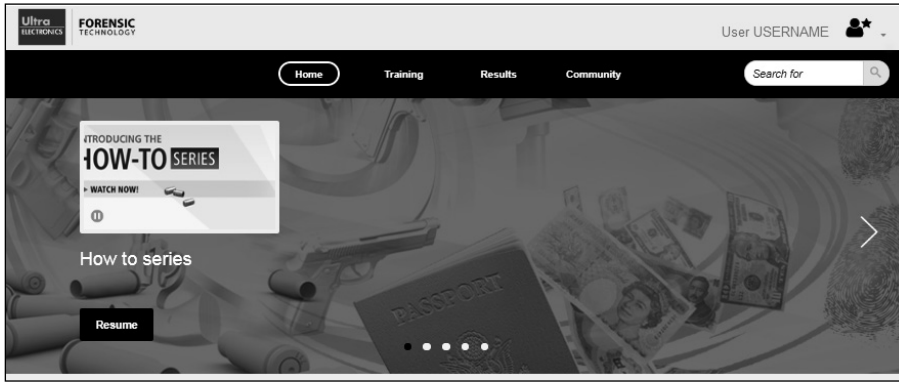
The quality of the markings left on a fired ammunition component is of major importance to the firearm examiner and the ballistic imaging systems. Sometimes the differences in marks on fired components discharged from the same gun can be so great as to preclude a comparative determination. Bracketing tries to overcome this by relying upon the consideration of multiple test-fires and pieces of evidence fired from the same gun to account for the normal variations in marks inherent to the science. For example, consider that the quality of marks on test-fires could be ranked from one to ten with ten being the best. IBIS bracketing would involve selecting two exhibits fired from the same gun for system entry—one at low end of the scale of poor marks and one at the high end of the scale with good marks. This in effect creates a virtual "bracket" in the database, from 1 to 10, against which new exhibits can be ranked. For example, a test-fire with marks ranked in the middle of the scale will be ranked a 5 when searched against the database. Note, however, that bracketing can have workload and system operation tradeoffs if overused.

Ultra Electronics Forensic Technology Training Standards[46]

With specific law enforcement needs in mind, the FT training team identifies customer requirements in order to create task-based training guides that shorten the learning curve and immerse users in the software's workflow so that they can work sooner and more efficiently. A Subject Matter Expert (SME) works closely within the FT training team, and it is the ongoing responsibility of this SME to ensure the technical knowledge of the trainers delivering information in the classroom. A series of tools is designed for each curriculum: pre-assessment, course plan, training guide, and post-assessment. A member of the training team can also visit a client to perform the following tasks on-site: interview users to determine their roles in the use of IBIS, learn how training can be more beneficial or in line with their needs, present possible documentation and training alternatives, observe training and share relevant observations with the technical team.

46 Courtesy of Ultra Electronics Forensic Technology Inc.

All training can be delivered on-site, in a classroom, or online over several media platforms such as FT's Learning Management System (LMS). All IBIS users have access to the Ultra Electronics Forensic Technology e-Learning service which is designed to support and deepen their knowledge of IBIS solutions. This growing resource library is available through a secure web portal that provides exclusive access to basic training courses, user guides, and other helpful information including webinars and how-to videos to help maximize the effectiveness of IBIS solutions. The e-Learning system is web-based and accessible from any device with a web browser. It can be tailored to meet the need of the any program by offering new students the ability to walk-through course material prior to the start of any training class. This pre-course material will aid in developing the base knowledge needed for new IBIS users.



Critical Elements

- **Training:** Get the proper IBIS training. Proficiency is critical. The worst possible scenario for the user and the technology provider is to not realize success with IBIS because of improper image acquisition.
- **Quality assurance:** Implement a quality assurance protocol to monitor the input of both image and case-related data.
- **Continued adherence to protocols:** Follow the IBIS protocols that are taught during IBIS training; they are designed to maximize the advantages of the system. For example, the system enables the capturing of three different types of marks from the surface of fired cartridge cases. All three should be captured in order to optimize the correlation process.
- **Maintain proficiency:** Implement a peer review process and perform periodic proficiency testing. IBIS coaching is available and is especially recommended as system upgrades introduce new capabilities.

Key Considerations

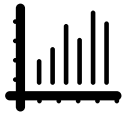
- Identify who will be acquiring images and the required skill level. For example, consider these three levels of operators:
    - **Basic Operator:** Individuals with basic office computer skills can be trained in a matter of days to perform the data input, including image acquisition of a fired cartridge case and bullet representing a single test-fire exhibit or single piece of evidence. A basic operator can work independently, with general supervision, inside a lab or remotely from another location (e.g., a police department), entering single test-fire exhibits and criminal case data involving a single piece of ballistic evidence (i.e., one fired bullet or one fired cartridge case). A basic operator is normally not trained or expected to enter criminal case data involving multiple pieces of ballistic evidence that must be triaged in an effort to select only one or two exhibits for actual data input.
    - **IBIS Technician:** In addition to the requirements of a basic operator, an IBIS technician will have additional training and experience (a matter of a few weeks) providing him or her with the ability to discriminate between multiple pieces of criminal case evidence which must be triaged to select one or two exhibits for data input.

  - **Firearm Examiner:** The requirements for a firearm examiner go well beyond those of a basic operator or IBIS technician. A firearm examiner will have sufficient levels of in-depth training and practical experience (generally two to three years at a minimum) in all areas of firearm examination and forensic ballistics to be recognized and accepted by a court of law as an expert witness.
- Establish training plans for various operator levels. Also, consider safety and environmental issues.
- Establish proficiency standards and testing procedures.
- Establish and integrate quality assurance standards and methods to monitor the input of data.
- Post training aids (such as image acquisition standards charts) for user-ready reference.

Summary

The Most Important Thing
Collect good quality image data from fired bullet and cartridge case specimens so the best possible results are obtained from the automated ballistic imaging process.

The Next Step
With the input of quality data addressed here, the next chapter discusses the fundamentals of task number nine of *The 13 Critical Tasks*—Reviewing Correlation Results.



TASK 9

Reviewing Correlation Results

Why review correlation results?

The goal of reviewing the correlation results generated by the **IBIS®** Correlation Engine is to find high confidence matches among all the fired ammunition components acquired into IBIS. The timely identification of prospective matches can, in turn, help generate substantial crime solving leads and provide prevention value when taking the presumptive approach described in this book. This value should more than justify the investment of time and resources that are required when executing the IBIS component of any crime-solving program.

Correlation results review represents a crucial deliverable at a critical juncture. Careful attention must be given to this task and its various elements because if a match is missed here, a second opportunity to find it may not present itself.

How to Review Correlation Results

It may be worth taking some time here to clarify how prospective matches and hits are found between ballistic evidence and test-fires in an automated ballistic technological environment like IBIS. The IBIS search engine extends the capabilities of law enforcement agencies to quickly find links between firearm-related crimes. Firstly, the technology generates information that can be used to promptly find prospective matches; it does not conclusively identify matches between ballistic exhibits. A match that is visually identified using IBIS is often sufficiently apparent to provide an investigative lead, without having access to the physical evidence. If required for court testimony, an IBIS match is formally confirmed by a firearm examiner who would compare the physical exhibits under a comparison

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microscope in order to render an expert opinion. In his or her opinion, if a match is confirmed between two exhibits, a "hit" is declared. The value of the IBIS correlation process is that it can perform thousands of comparisons in a matter of minutes, at speeds well beyond human capability, to find the needles in the haystack.

Secondly, this computing power allows firearm examiners to do what had previously been extremely difficult to sustain—conduct a reasonably accurate review of every piece of evidence against every other piece in the inventory. When IBIS stations are linked in a network, the inventory from one station, in effect, becomes the inventory of all, giving the users the ability to do what had previously been impossible to perform and sustain.

Correlation results are examined using **IBIS®** MATCHPOINT™—the analysis station for reviewing the prospective matches returned by the IBIS Correlation Engine. The similarity scoring puts the most likely matches at the top of the list, but the prospective matches must be reviewed by visually comparing the captured images of the exhibits to determine if any are relevant. This is where high-quality 3D imaging is valuable.

MATCHPOINT virtually emulates the functions of a comparison microscope, such as the image orientation, the adjustment of the magnification, and the direction of the light source. The unique 3D capabilities also provide capabilities *beyond* the microscope experience by allowing experts to better view images of all types of cartridge cases and bullets, from the pristine to the most severely damaged—including bullets fired through polygonal rifled barrels and many smooth bore or converted firearms. MATCHPOINT can help reduce the wait time and lineups that can occur when sharing a comparison microscope in the lab—as experts will need to spend less time there.

Some forensic experts who have had the opportunity to use IBIS to make comparisons of bullet images have commented that the traditional comparison microscope may well become redundant in the future because of the state-of-the-art viewing capabilities made possible by 3D technology and high-definition systems like IBIS. Furthermore, 3D comparisons can help match bullet pairs that are challenging when using 2D images or a conventional comparison microscope. This is especially true when comparing bullets with different material compositions, such as when comparing lead bullets against copper-jacketed bullets.

Streamlining the Confirmation Process

To make it easier and faster for firearm examiners to perform confirmations of potential IBIS matches on the comparison microscope, IBIS can be linked with the VisionX Comparison Microscope.

VisionX Comparison Microscope

Also, the IBIS Hit Viewer application extends the power of IBIS viewing tools to the VisionX to streamline the hit confirmation workflow and simplify the ballistic identification process. With the IBIS Hit Viewer application, the examiner can:

- View two cartridge case or bullet exhibits from IBIS in the Side-by-Side Viewer.
- Assist in the physical comparison of potential matches based on the images matched with IBIS as a starting point.
- Use high-resolution IBIS images and 3D models to reveal similar markings and expedite difficult comparisons.

Remote Collaboration

VisionX allows for exceptional collaboration among examiners working remotely, through its software features and motorized microscope controls.

In essence, an examiner at one location can assist an examiner at another location, by inviting them to view or take control of their screen and microscope functions. Doing so facilitates peer reviews and the viewing of matches across jurisdictions – saving costs, and thereby reducing the time required to confirm or disprove potential matches. This cooperative environment can accelerate the hit confirmation process and increase collaboration across borders. Remote collaboration can also enhance training activities, when a senior examiner or trainer can view and take control of a student's microscope remotely, reducing training costs and leading to remote coaching opportunities that can help accelerate learning and increase confidence.

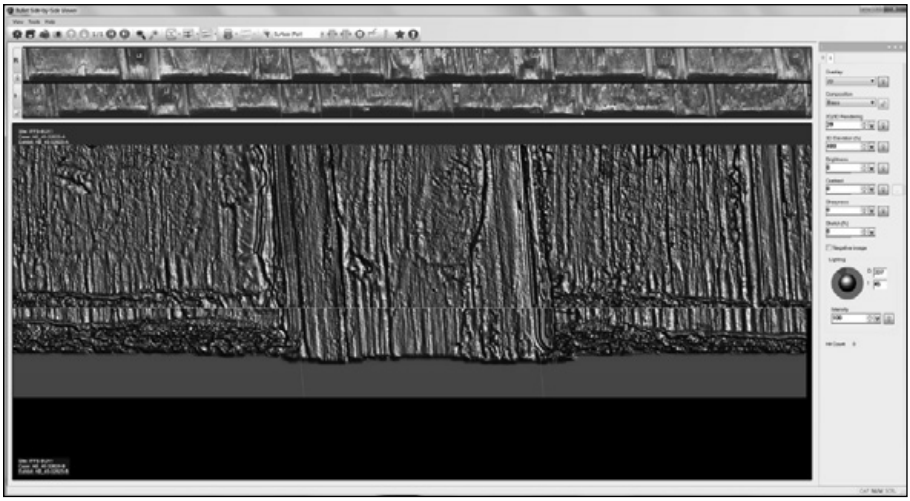
Virtual 3D Microscopy

It is clear that capturing high-definition 2D images and 3D topography models provides great data for a correlation search engine to find prospective matches. What's more, the reliable capture of surface details and shapes is ideal for reviewing the top correlation search results by using virtual microscopy to visually compare the match candidates.

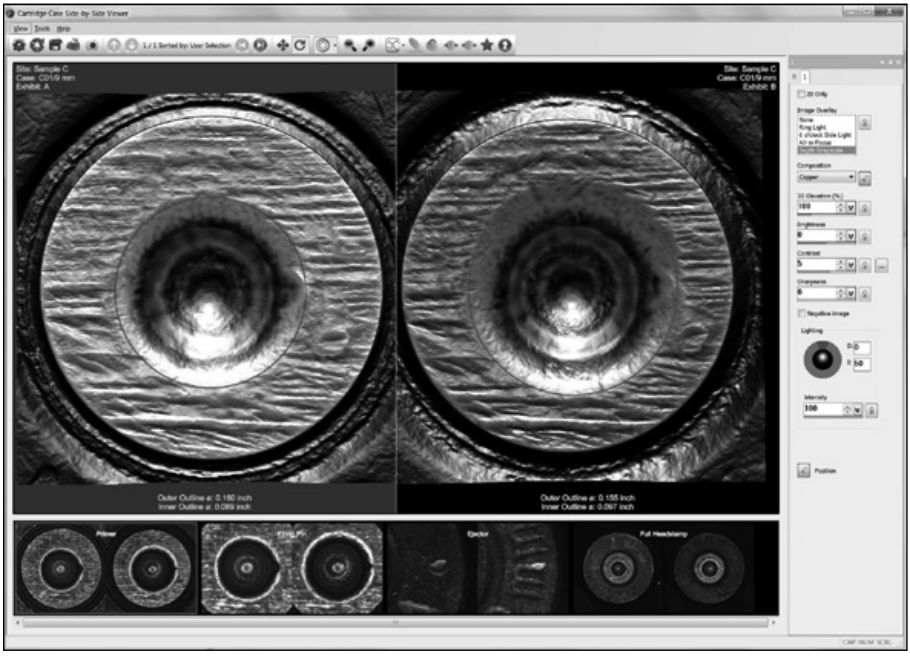
According to Ultra Electronics Forensic Technology Inc., 3D comparison viewers offer capabilities beyond conventional optical comparison microscopy, such as:

- Rapid comparisons without the challenges of handling physical evidence
- Hassle-free viewing of images that are always in focus with ideal lighting and in an optimal position
- Viewing of multiple cartridge case regions of interest based on standardized protocols for consistent image types and 3D topographies
- Viewing of a bullet's full circumference as a continuous image, allowing global comparison and phase matching
- Freedom of control to overlap, blend, rotate, offset, and magnify images, along all movement and rotation axes, for comparison purposes
- High-level screening based on simultaneous display of images from multiple results
- Software tools to enhance and automate comparisons, including:
    - Virtual augmentation of images to better reveal fine surface details and patterns
    - Simulated metallic reflectivity to enhance light conditions
    - Surface depth represented as an elevation map
    - Automated reshaping of deformed and fragmented bullets to correspond to a reference sample, without distorting the surface markings
    - Automatic alignment to the best matching conditions
    - Access to new perspectives to evaluate surface details, such as a cross-sectional elevation profile of a three-dimensional topography, or the viewing a firing pin impression from its underside to quickly differentiate firearm types based on the typical characteristics of their firing pins

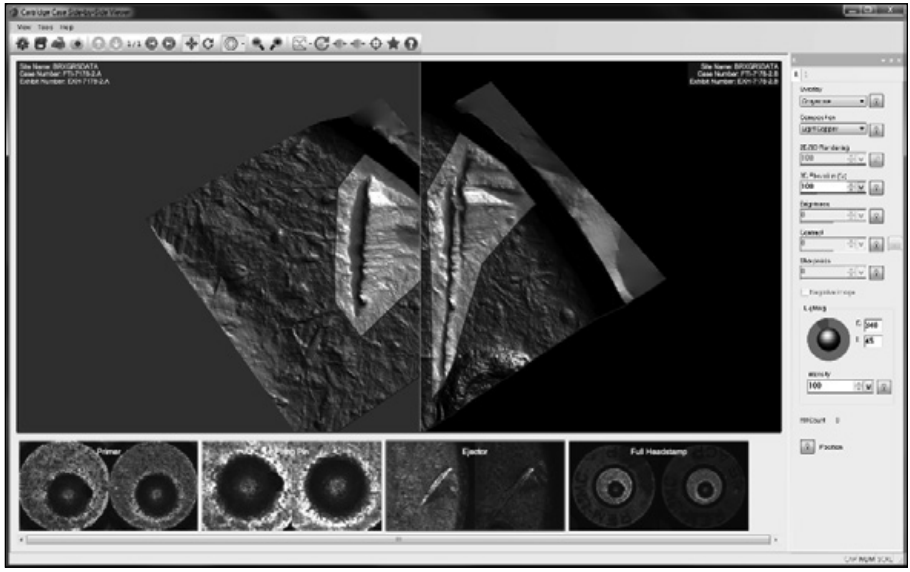
Side-by-Side Comparison: Overlapped 3D Bullets



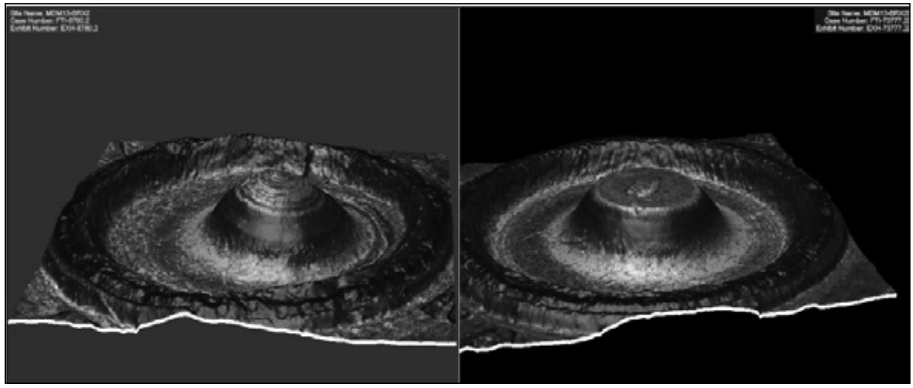
Side-by-Side Comparison: 3D Primer



Side-by-Side Comparison: 3D Ejector Mark

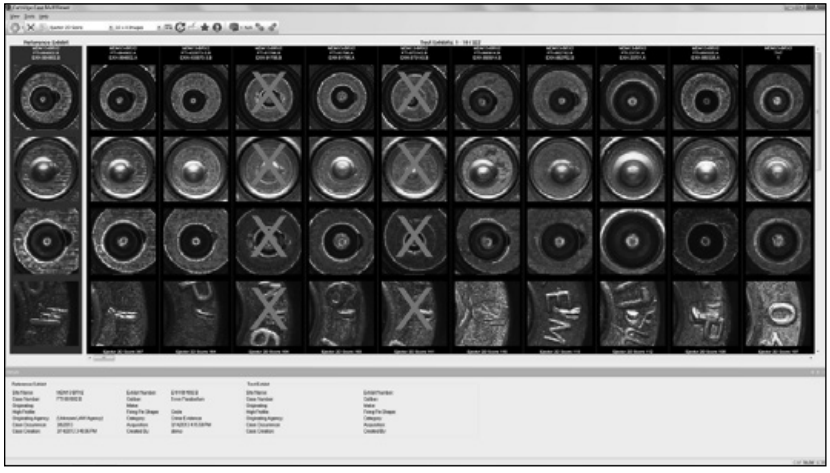


Side-by-Side Comparison: 3D Inverted Firing Pin



Full Head Stamp Image

Cartridge Case MultiViewer



High-Performance Correlation Algorithms

An automated ballistic identification system must contend with large quantities of challenging firearm evidence. As the volume of evidence acquisitions grows, the correlation engine must maintain strong performance so that prospective matches remain in the top search results.

At the same time, its comparison algorithms must be tailored to the complexities of firearm forensics with all its inherent challenges. Correlation algorithms must be tolerant to variations in firing conditions, so that similarities can still be matched even when markings vary greatly on cartridge cases and bullets fired from the same firearm.

Impact of the HD3D Upgrade on IBIS Correlation

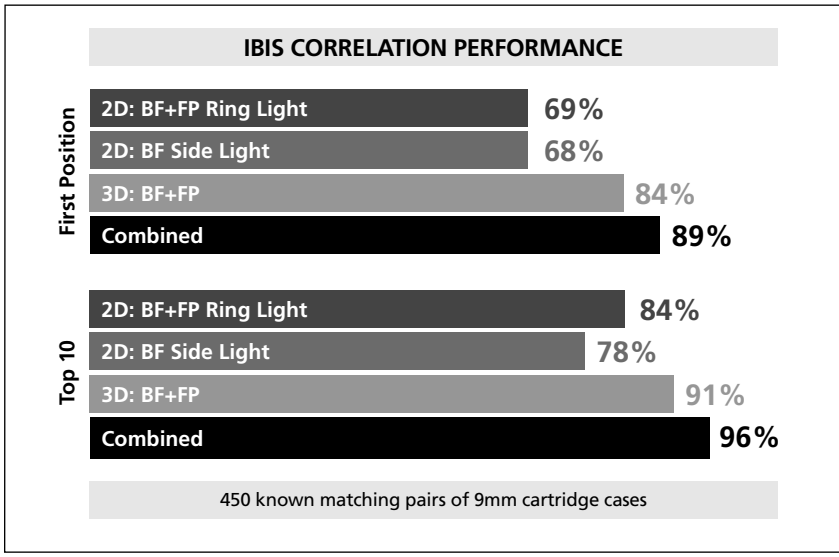
According to Ultra Electronics Forensic Technology Inc., after the HD3D upgrades of BRASSTRAX, the number of correlation scores doubled in 2014. The additional 3D correlation of the Breech Face (BF) and Firing Pin (FP) areas proved much stronger than 2D correlation, and its benefits were gradually noticed as more HD3D acquisitions were performed. At the same time, the correlation of the Breech Face Side Light image was introduced and applied retroactively on all previous IBIS acquisitions, yielding immediate benefits to correlation results.

A 2014 correlation test revealed the relative performance of these new correlation capabilities, and their complementary benefits when combined. The test involved a dataset of 450 known matching pairs of 9mm cartridge cases, corresponding to 900 cartridge cases fired from 450 comparable firearms. It is worth noting that some of the known matching pairs did not have markings for sufficient agreement during visual confirmation, making 100% correlation performance unachievable. In addition, this test did not include the ejector mark correlation. Nevertheless, 96% of matches were found in the top 10 results of at least one of the five correlation scores from the breech face and firing pin impressions (2D and 3D).

The increased combined correlation performance makes it easier to find a match, especially with the added visual comparison advantages of high-definition 3D. This resulting increase in success re-energized some IBIS sites to acquire more evidence, which in turn further raised the hit ratio.

On NIBIN, of the 2,548 leads that were published by the NIBIN National Correlation and Training Center (NNCTC) over a period of seven months in 2016, 99.92% were found in the top 20 results of at least one of the correlation scores.[47]

47 Ronald Nichols, *Evaluation of Rank Positions Within Regions of Interest (ROI) for Published NIBIN Leads*. AFTE Journal, Volume 51 Number 1, Winter 2019.



Bullet Correlation

Bullet correlations focus on the markings generated from the firearm's barrel rifling that produces striations. Bullet correlation performance can vary significantly depending on the firearm models and ammunition types.

A 2014 correlation test revealed the following performance levels:

- For a dataset of 234 known matching pairs of 45 Auto 6-Left bullets, IBIS correlation achieved 92% in the top 10.
- For a dataset of 424 known matching pairs of 9mm Luger 6-Right bullets, IBIS correlation achieved 87% in the top 10.

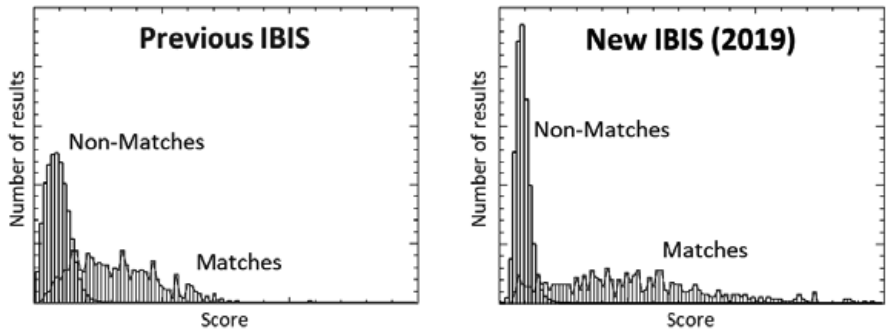
For damaged bullets, the IBIS acquisition process ensures that correlation performance is not impacted by the damage to the bullet shape. However, if areas of the bullet are missing, correlation performance will decrease slightly depending on which areas contained the matching markings, because not all areas will always contribute to a match. A partial bullet simply has fewer areas to correlate, thus reducing the potential to identify similarities in phase. With the same dataset of 424 known matching pairs of 9mm Luger 6-Right bullets, partial bullets were correlated, with three of the six land impressions omitted, against the dataset of full bullets. Correlation performance decreased by less than 5% compared to the top 10 performance with full bullets.

Recent Innovation

According to Ultra Electronics Forensic Technology Inc., IBIS technology is the most advanced of its kind, with decades of worldwide leadership and scientific innovation in the field of automated ballistic identification. Its most recent upgrade (version 3.2 released in 2019) includes another breakthrough in cartridge case correlation that raises the performance levels even higher. In a test of 3,284 known matching pairs from 9mm caliber firearms, for at least one correlation score:

- 99.0% of matches were found in the top 20 results (4.0% more than previous IBIS version).
- 98.6% of matches were found in the top 10 results (5.5% more than previous IBIS version).
- 95.2% of matches were found in the first result (9.8% more than previous IBIS version).

This test also revealed that the recent improvements in correlation technology further separates the matches from the non-matches in the search results, so that the score of prospective matches will generally be more distinguishable. This is an advantage when image databases become very large because it becomes more likely, statistically speaking, that interesting non-matches will increasingly be evaluated as more similar than weak matches.



This stronger correlation combined with more meaningful score values should reduce the burden of correlation reviews and enable an expansion in the volume of correlation reviews, with less impact on the efficiency of resources.

Additionally, recent advances in statistical modeling have led to a score normalization process that produces more meaningful score values in a standardized score range. A score that is extraordinary (much higher than the other scores in the list) has the effect of being normalized to a high value. Conversely, scores that are within a mass of similar scores will have similar, ordinary, low values. A high normalized score means that an exhibit is much more

similar to the reference exhibit than the many other correlated exhibits in the dataset. The normalized scores are therefore more meaningful than the absolute values of the traditional correlation scores.

The standardized score range of the score normalization process makes it possible to compute a single *Unified Score* of overall similarity. The Unified Score, calculated from the combination of the individual normalized scores, can be used as the single criterion with which to review correlation results. Doing so has the advantage of only requiring the review of about half as many results as when reviewing the top 20, while achieving the same performance.

Recommended Best Practices

The IBIS Protocol

Ultra Electronics Forensic Technology recommends the review of the top 20 prospective matches for each score type returned by the IBIS Correlation Engine, as a balance between the effort required to review the results and the likelihood of missing a match. IBIS network managers can set their own review threshold recommendation adapted to their particular circumstances. For example, some studies[48] were performed on NIBIN to determine the performance associated with different threshold options.

IBIS operators are not limited to reviewing only the top 20 results. If time and workloads permit, operators should look further down the list of correlation results in order to find potential hits. Ultra Electronics Forensic Technology's scientists indicate that match probabilities drop fairly rapidly among correlation results ranked below the top 10. Although the IBIS algorithms are tuned to rank samples as high as possible on the list, some matching exhibits will fall below the top 10 rankings for a number of reasons related to people, processes, and technology. Therefore, some IBIS users review more results as a matter of protocol, depending on the case at hand.

One of IBIS' strengths with cartridge cases is that it processes the images of three distinct regions of interest that can be used to help identify possible matches. The regions of interest are captured independently of one another, so capturing and evaluating all available marks significantly increases the chances of finding a match. Some types of firearms do not leave quality breech face or firing pin marks; however, they do leave quality ejector marks. One such firearm is the AK-47. For this type of weapon, the ejector mark is often the most reliable mark for evaluations. A firearm examiner evaluates a number of marks to help determine that two exhibits were fired from the same firearm.

48 Nichols, ibid., and S.R. Garten, *IBIS BRASSTRAX correlation review techniques*, AFTE Journal 49(2):104-110, January 2017.

Using Manual Correlations to Target Different Regions

After an exhibit has been submitted, IBIS automatically generates a correlation request, using default settings, for the acquired exhibit. MATCHPOINT can be used to generate additional manual correlations that allow you to change some of the parameters, such as to target a different group of IBIS sites or to generate an international correlation request. An example: An agency has a very high-profile case involving a Glock firearm; the test-fire(s) should be processed through IBIS as is normal for all firearms taken into custody for police investigation. Later on, the investigating agency obtains crime-gun trace data on that firearm indicating that it was recently purchased in a city that is outside the automatic correlation region. In this case, a manual correlation can be performed with that particular firearm's test-fire(s) by selecting the region where the firearm was purchased.

Most IBIS networks worldwide have a national correlation scope. However, in large IBIS networks such as in the U.S. and South Africa, one approach is to automatically correlate against a geographical region where it is most likely that other incidents could involve the same firearm. An additional correlation can be generated against the remainder of the national scope. On NIBIN, a National Correlation Server (NCS) was deployed in 2018. The NCS is dedicated to handling correlation searches against all of NIBIN so that the processing of normal regional correlations is not affected. The additional nationwide level of intelligence complements the existing regional correlations.

Why are manual correlations valuable? Because even if the automatic correlation targets a large area, or even the whole country, some exceptional information may lead the investigation to another area or even another country.

Dedicated Review Specialists

The City of New York Police Department (NYPD) and the South African Police Service (SAPS) assign Ballistics Unit staff that are exclusively dedicated to the review of IBIS correlation results. These specialists become very skilled at finding potential matches and are one of the reasons that NYPD and SAPS are the two leading IBIS users in the world in terms of the number of cases linked or hits generated.

An effective approach to optimize people and processes in the use of IBIS technology is to implement a centralized service for correlation reviews. ATF employs many dedicated correlation review specialists at the NIBIN National Correlation and Training Center (NNCTC). These specialists review correlation results for acquisitions by state and local law enforcement agencies. The centralized correlation review services provided by the NNCTC make it possible for police departments to acquire their firearm evidence without having to allocate

specialized resources to reviewing the ensuing correlations. And, they don't have to depend on a local or state laboratory to provide this service in a timely manner. This approach allows the delivery of investigative leads within 24 to 48 hours.

Critical Elements

- **Training:** Acquire the skills required to interpret the IBIS correlation results and utilize the various MATCHPOINT analysis tools.
- **Quality assurance:** Implement a quality assurance protocol to evaluate all of the output data, such as the correlation results for breech face impressions, firing pin impressions, and ejector marks, and other case information as well.
- **Continued adherence to protocols:** Ensure correlation results review is conducted for every exhibit reported and that it is completed in a timely manner that meets the needs of the investigative and prosecutorial stakeholders.

Key Considerations

- Identify the persons responsible for conducting IBIS correlation results reviews.
- Create a comprehensive correlation results review protocol.
- Identify quality assurance methods for the correlation results review process.

Summary

The Most Important Thing
Review IBIS correlation results in a timely and skillful manner so as not to miss potential matches. This is crucial at this juncture.

The Next Step
After a prospective IBIS match has been identified, it must be confirmed by a qualified firearm examiner before it can be used in legal proceedings. The next chapter discusses the fundamentals of task number ten of *The 13 Critical Tasks*—Confirming Hits.

TASK 10

Confirming Hits

Why search for Hits?

A program based on the presumptive approach depends on people. Although technology helps people be more efficient and effective, and supports previously unsustainable operations, the confirmation of prospective matches is dependent upon trained and qualified personnel. As described earlier, the confirmation of a match made between two cases is called a "Hit". ATF defines a "NIBIN Hit" as:

> *"The result of two or more firearms ballistic evidence acquisitions that have been confirmed as a match by a firearms examiner. NIBIN Hits are based on correlation review of digital images using MATCHPOINT and microscopic confirmation by a firearms examiner. This information/ intelligence can be used for investigative purposes and is suitable for court purposes."*[49]

Today, the actual confirmation of the potential matches is done by experts using a traditional comparison microscope. Depending on the characteristics of the exhibits under examination and the adjustments required by the microscope, an examiner may experience difficulty in finding the corresponding areas of agreement between the markings on each exhibit. These difficulties can significantly increase the amount of time and effort required for the examination and can affect the eventual conclusion.

NOTE: The data and claims contained in this chapter have been provided by Ultra Electronics Forensic Technology Inc. which vouches for the accuracy and veracity of the information contained herein.

49 Bureau of Alcohol, Tobacco, Firearms and Explosives. *Minimum Required Operating Standards For National Integrated Ballistic Information Network (NIBIN) Sites*. 2018. Provided courtesy of the ATF NIBIN Branch, December 20, 2018.

A new technology that takes advantage of 2D and 3D visualization tools, such as MATCHPOINT, can help firearm examiners make comparative conclusions using a comparison microscope faster and with less effort.

Automated ballistic identification technology like IBIS also enables agencies to share electronic data at the local, national, regional, and international levels. An agency can now electronically query the evidence inventory of another agency to locate potential Hits. This electronic pooling of evidence requires well-coordinated actions between the people who must confirm the cases as Hits and testify to the examinations in court.

Hits vs. Leads

The forensic lab's confirmation process for Hits involving peer review and often the recall or exchange of the actual physical specimens can—depending on the circumstances and processes in place—take a significant amount of time. For example, many labs return evidence to the submitting agency once the initially requested examinations are completed. It commonly occurs that the need for a NIBIN Hit confirmation arises well after the initial lab examinations have been done and the evidence must be resubmitted to the lab to complete the new task. The lab may have to wait days or even weeks before that evidence is returned.

The problem? The older the Hit, the less value it holds for the investigator. Some NIBIN labs will only provide Hits, and Hits can take time to identify. While essential for providing expert testimony in court, when not done in a timely manner the Hit confirmation process can become an obstacle that hampers the investigative operation.

ATF has perfected a more timely alternative to the Hit. It's called a **NIBIN Lead**. This provides timely crime gun intelligence to advance the investigative process.

ATF defines a NIBIN Lead in this way:

> *"An unconfirmed, potential association between two or more pieces of firearm ballistic evidence based on a correlation review of the digital images in the NIBIN database by either a firearms examiner or a trained NIBIN technician."*[50]

50 Ibid.

According to the ATF NIBIN National Correlation and Training Center (NNCTC), as of January 2019, the NNCTC had conducted correlation reviews for *31 NIBIN sites representing 183 law enforcement agencies, achieving a 98.9% confirmation rate for all NIBIN Leads generated.*[51]

When requested by the appropriate ATF field division *Special Agent in Charge* (or Designee) and as resources permit, the NNCTC enters into a formal agreement with a *NIBIN Partner Site* (NPS) to perform correlation reviews on all ballistic evidence entered into NIBIN and identify NIBIN Leads or Negative for them within 24 to 48 hours. NNCTC services are handled by highly trained IBIS technicians. In addition, prior to dissemination to the field, the work performed by the technicians is peer-reviewed and then undergoes final review by a senior firearms and tool mark examiner assigned to the NNCTC. The ATF agreement with the NPS states:

> *"The fact that a site takes advantage of the NNCTC service will have no bearing whatsoever on the accreditation. A participating site simply needs to write the NNCTC into their procedures, and if needed, ATF will provide the qualifications and training of the individuals performing the correlation reviews."*

In contrast to a NIBIN Hit which a firearm examiner has confirmed and can testify to in court, a NIBIN *Lead* is intended to simply provide an investigative lead.

Recommended Best Practices

ATF National Firearm Examiner Training Academy

The National Firearm Examiner Training Academy provides training for apprentice/entry-level firearm and tool mark examiners from federal, state, and local law enforcement agencies. The Academy curriculum is composed of the fundamentals of firearm and tool mark examinations and serves as a basis for the trainee, under supervision, to develop into a qualified firearm and tool mark examiner. Applications for this training are accepted from law enforcement laboratories. Portions of this training are held at the ATF National Laboratory Center in Ammendale, Maryland. There is no cost for the training. However, students and/or their home agencies are responsible for certain travel related expenses. For more information, go to https://www.atf.gov/firearms/national-firearms-examiner-academy-course-id-frms-pg-0002.

51 National Institute of Justice, *The National Crime Gun Intelligence Center Initiative, NIBIN Entry/Correlation and Crime Gun Tracing*. Accessed at https://crimegunintelcenters.org/nibin-entry-correlation-and-crime-gun-tracing on January 24, 2019.

NIBIN National Correlation and Training Center (NNCTC)[52]

The NNCTC is an ATF facility located in Huntsville, Alabama, which performs timely correlation reviews (i.e., within 24 to 48 hours) for multiple NIBIN Sites and also provides training for Qualified NIBIN Users.

Recognizing that the true outcome value of NIBIN is the successful prosecution of criminal shooters, ATF requires the NIBIN Partner Site to agree to establish certain policies and procedures that align with the four critical steps of an effective and sustainable NIBIN program:

1. Comprehensive Collection: The NPS must establish internal policies for the collection and submission of all evidence suitable for entry into NIBIN, regardless of crime. Evidence includes cartridge cases recovered from crime scenes and test-fires from seized or recovered crime guns.

2. Timely Turnaround: Since violent crime investigations can go "cold" very quickly, the goal is to get the evidence into NIBIN as soon as possible after collection, and then to provide any and all relevant NIBIN intelligence (NIBIN Leads/Negatives) back to the investigator within 24 to 48 hours.

3. Follow-up: Investigators, intelligence personnel and prosecutors should pursue NIBIN Leads as appropriate. Follow-up contains three distinct but overlapping components: comprehensive crime gun intelligence, effective and thorough criminal investigation, and consistent prosecution.

4. Feedback: Helps motivate everyone involved in the investigative effort. It also provides data that empowers leadership to make fact-based decisions for the allocation of limited resources and improvement of the program.

52 Bureau of Alcohol, Tobacco, Firearms and Explosives. *Minimum Required Operating Standards For National Integrated Ballistic Information Network (NIBIN) Sites*. 2018. Provided courtesy of the ATF NIBIN Branch, December 20, 2018.

Open Case File: Allegheny County Medical Examiner

The Allegheny County Medical Examiner's lab provides forensic services for a number of law enforcement agencies within the county. The agreement with submitters of ballistic evidence is that the evidence will be retained by the lab until such time as the case is disposed of or the submitting agency instructs otherwise. This practice is designed to eliminate the need for time- and resource-wasting callbacks of evidence.

For example, the practice in many areas of the country is to submit fired bullets and evidence to the lab. The lab will examine and process the evidence through IBIS and network like NIBIN and, if there is no further need to hold on to the evidence, it is returned to the submitting agency. Subsequently, new evidence is submitted by the same agency or another agency, or a gun is sent in for test-firing and processing through IBIS. When the new evidence or test-fires are processed through IBIS, it often happens that the new evidence/test-fires appear to have similarities to the evidence that was previously submitted and then returned. Now, the lab has to issue a callback for this prior evidence to be returned for comparison with new evidence. This callback procedure takes time and resources on the part of the lab and the police agency.

It has been reported during *The 13 Critical Tasks Workshops* that the callback process can take anywhere from days to weeks or even months. And it is not unusual for the same evidence to be called back multiple times. Not only do callbacks waste time and resources, they expose the evidence to loss and damage and can leave its integrity in question. Maintaining an open case file of the evidence on behalf of the submitting agency until it is no longer needed avoids these pitfalls.

Centralization of Evidence: NYPD

The New York City Police Department has a policy in which all firearms and firearm-related evidence is sent to the centralized NYPD Ballistics Unit for examination, entry into IBIS, and gun tracing. The NYPD has established partnership agreements with other federal, state, and local law enforcement agencies operating within the City to submit all their firearms and firearm-related evidence to that unit.

Critical Elements

- Employ trained and qualified firearm examiners who can confirm matches and declare hits.
- Ensure physical evidence can be retrieved from its storage location in a timely manner and in accordance with chain of custody protocols and established laboratory intake processes.
- Report the results of examinations.

Key Considerations

- Define the terms for prospective matches, confirmed matches (hits) and links between cases.
- Define the protocol for the retrieval of firearms and firearm-related evidence for examination at the lab.
- Define the protocol for confirming matches and exchanging data about evidence and test-fires between different jurisdictions.

Summary

The Most Important Thing
Trained and qualified personnel to confirm prospective matches (i.e., declare "Hits") and provide detectives with more-timely investigative leads.

The Next Step
With a hit declared, the stakeholders need to know. The next chapter discusses the fundamentals of task number eleven of *The 13 Critical Tasks*—Communicating Hit Information.

TASK 11

Communicating Hit Information

Why communicate?

Like any other asset, information can be extremely valuable if used wisely and is virtually worthless if squandered or ignored. The introduction of automated ballistic identification technology almost 30 years ago created a new dynamic in the way in which information about guns and crimes could be gathered and shared.

The reality for well over half a century was that information about guns and their connection to crimes was generally obtained in reaction to a request made by police to conduct a particular examination. For several decades, this mind-set prevailed from one generation of law enforcers to the next and still exists in many places today.

Today, firearm examiners in the lab at their workstations, using automated ballistic identification technology like IBIS, are likely to uncover information about links between crimes, guns, and suspects before the investigating detectives do. And just like in a relay race, forensic personnel must pass the "information baton" to those investigators in a timely manner. Additionally, the investigators must be aware that information of this nature can be generated, and they have to understand what to do with it. To ensure crime-solving opportunities are not missed, protocols need to be established to make sure that the information is communicated quickly, and appropriately pursued.

Automated ballistic identification technology, when applied according to the presumptive approach, changes the prevailing dynamic and puts the ballistics lab in a position to be much more proactive when obtaining information about guns and their connection to crimes. Most importantly, the ballistics technology helps the lab to sustain this position.

You know that there is a communication problem when you hear **forensic specialists** in the lab make statements like these listed below:

- We don't know if we are getting all of the evidence that is being recovered at crime scenes, nor do we know if we are getting all the guns that are taken into police custody.
- I called the detective assigned to the case and told him that we made a hit between his case and a gun recovered in another case. He asked me what a hit was. When I told him he answered—OK, so what? He didn't seem interested at all.
- We never get feedback from the detectives about the value of the hits that we refer to them—we are left in the dark and are questioning why we are putting continued efforts into this program.
- We don't know who the investigating detectives are—their names are not on the evidence transmittal forms because they change all the time, so we never know if the right people are getting the hit information that we generate.

…or when you hear statements like these from the **detectives**:

- I didn't know the Lab could do that—this is great stuff—how long have we been able to do this? I wish they had told us sooner.
- We never collect the spent cartridge cases—we usually just kick them off the street into the gutter.
- When we send guns or evidence to the lab, we never hear anything back. If we do, it's months or sometimes years later.
- The detective assigned to the case never sees the hit referral reports—they all go to another unit and sit on somebody's desk for months.
- I have never seen a Hit report.
- All of a sudden we started getting these Hit reports—nobody ever said what we were expected to do with them.

These statements represent commonly recurring remarks made by actual detectives and forensic specialists all over the world.

Three phases of communication are needed when employing the presumptive approach: (1) the relaying of hit information to investigators, (2) the investigative follow-up of the information referred, and (3) the assessment of the value of information referred with regard to advancing the investigation.

While there are many stages along *The 13 Critical Tasks* process in which things may go awry, it is at this stage where communication mishaps and inefficiencies can quickly become labeled as "government waste". Why? Because what is communicated or not communicated at this stage will affect both the reality and the perception of the outcome value of all of the inputs made thus far in terms of people, processes, and technology while taking the presumptive approach.

Attention to this task will help ensure the program is producing the intended value and will identify a communication problem so that proper remedial actions can be taken.

Taking the time up-front to communicate with investigators about what they can expect to see in a hit report, the potential value of that information, and the expectations of how it is to be handled and reported, can go a long way in ensuring the effectiveness of the entire program.

The documentation and appropriate communication of the investigative follow-up on a hit will help ensure that the information produced in talking the presumptive approach is not wasted and will help administrators gauge the outcome value of the efforts applied. Most will agree that a program that provides no value should not be sustained. However, it would be terrible to withdraw support from a valuable public safety program because efforts were not made to communicate its value to the affected stakeholders—especially those who authorized it and the public who benefits the most from it.

Recommended Best Practices

New Jersey State Police LISTSERV

New Jersey State Police (NJSP) uses one centralized LISTSERV (email list) to disseminate NIBIN alerts. Subscribers on the list. The subscribers include law enforcement officers, prosecutors and forensic personnel from across the state who have a *Need to Know* as well as those who are authorized to *Want to Know* about a NIBIN Lead or Hit.

The LISTSERV method allows the NJSP to communicate timely and effectively with all of the subscribers with a single email message to the group address.

LISTSERV capabilities are provided by the federally funded *Regional Information Sharing Systems (RISS) Program* ***which facilitates information sharing among local, state, federal, and tribal criminal justice partners to support criminal investigations.***

However, the point of this best practice is the unfettered exchange of crucial information across the affected crime region. There are many technical solutions for effective information sharing available on the market today: the point is to select one and use it.

Boston Police Department: Email Notification System

The Boston Police created an email notification process to communicate Hit information. They created a group email protocol based on two groups of people within the police department; those who have a *need to know* (NTK) the information and those who *want to know* (WTK) the information (as dictated by department protocols). The NTK group includes assigned detectives and supervisors, intelligence and command staff, including the Commissioner. The WTK group includes other approved departmental stakeholders. Currently, multiple people within the police department are notified of each IBIS hit. The email contains detailed information about the evidence and guns, the people involved, the two or more cases connected by the hit, and the requirements for investigative follow-up.

Note: The *Homicide Division* is provided with a direct pre-notification, before anyone else, in the event that operational security concerns dictate the information should not be shared at that time.

Boston Police Department: IBIS Hits Follow-Up Policy

The Boston Police have a policy that requires reporting on leads resulting from an IBIS Hit. The detective in charge of investigating a shooting has the responsibility to note any further leads resulting from an IBIS match. The policy requires reporting every 30 days. The information is entered into a *Detective Case Management System*.

New York City Police Department of Ballistics Computerization Hits Follow-Up Protocol

The *NYPD Firearms Unit* sends follow-up surveys to recipients of Hits generated from automated ballistic computer systems. These surveys collect information from the investigators about their follow-up of any leads generated by the Hit data. The survey data is electronically managed in a database. Examples of the follow-up actions noted on the survey form are:

- Arrest/additional arrest made
- Substantial lead developed
- Closed investigation re-opened
- Information incorporated into ongoing investigation
- Suspect(s) arrested before information received
- Suspect died before information received
- No investigative leads/investigation closed

Critical Elements

- Collaborate with affected stakeholders on the development and implementation of efficient processes to generate information linking crimes, guns, and suspects. Everyone should know what to expect and what is expected.
- Communicate the information to investigators in a timely manner.
- Create awareness of the process, its value, and the expectations of the stakeholders.
- Require the investigative follow-up of Hits.
- Report on the investigative action and Hit value.
- Track hits and report them to stakeholders.

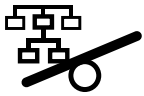
Key Considerations

- Employ sustainable methods for communicating the Hit information.
- Report on investigative follow-up.
- Create awareness among affected stakeholders.

Summary

The Most Important Thing
Establish protocols to ensure that Hit information is communicated to investigators in a timely manner, that the Hits are appropriately pursued, and that crime-solving opportunities are not squandered.

The Next Step
The next chapter discusses the fundamentals of task number twelve of *The 13 Critical Tasks*—Leveraging Tactics and Strategies.



TASK 12

Leveraging Tactics & Strategies

Why leverage?

Just as it is important for programs to be integrated and leveraged, so too must tactics and strategies. In order to ensure that the actions of all stakeholders are optimized, organizational stovepipes must be overcome through the sharing and integration of relevant tactics and strategies. Hit information must be shared and leveraged using the data generated by other strategies. By combining the various types of data gathered in taking the presumptive approach, we can optimize opportunities to generate new and better intelligence, design more effective enforcement tactics, and maximize the outcome value of the entire firearm crime reduction initiative.

For example, tactical benefits can be maximized by leveraging IBIS data, other forensic data, crime gun trace data, and other relevant data (e.g., Gunfire detection data, license plate reader data, etc.) as well. Crime mapping and analysis tools can be of great value in increasing the leverage and sustaining the effort.

A good example of maximizing strategic benefits to deliver more outcome value is the Boston Case Study on Freddie Cardoza used in an earlier chapter. Cardoza, a violent criminal, had received a lengthy prison term which removed him from the community upon which he and his fellow gangsters preyed. The presumptive approach delivered tactical benefits that lead to Cardoza's arrest and conviction, and strategic benefits that resulted in Cardoza's removal from the community for a lengthy period of time. Despite what appeared to be a significant outcome value in the Cardoza case, the stakeholders pushed it a step further. Through their continued collaboration on trying to find ways to derive even more value from their work, they developed a strategy that enabled them to use the Cardoza case as a deterrent. Posters and communications about the lengthy sentence received for possessing a single bullet were launched to dissuade younger members of the community from following in Cardoza's footsteps. An effective violence prevention strategy is priceless.

Recommended Best Practices

Project Safe Neighborhoods (PSN)

Project Safe Neighborhoods, mentioned in detail in earlier chapters, is a program administered by the United States Department of Justice (DOJ), focused on reducing gun and gang violence. The program uses collaborative stakeholder planning and execution, the leveraging and integration of programs, communication and outreach, and holding people accountable. PSN marries enforcement with prevention and deterrence efforts. It also adds another very important element that is critical for success: **the resources to help get the job done.** PSN helps provide the participating stakeholders with the tools they need in terms of people, processes, and technology. More information can be found on the Project Safe Neighborhoods Web site: www.justice.gov/psn.

Boston Impact Players and Street Shootings Review (IPSSR)

As mentioned in earlier chapters, the IPSSR originated out of the Boston Gun Project: Operation Ceasefire, upon which many of the tenets of Project Safe Neighborhood's are built. The programs are based on collaborative partnerships, the integrating of data from the programs of various law enforcement and criminal justice agencies, and the leveraging of grassroots organizations and the faith community.

The Chattanooga Police Department (CPD) Gun Team (GT)

In an effort to make neighborhoods safer, the CPD has created a special unit to close open firearm-related cases, and perfect new ones. The GT operates according to policies and procedures outlined in the *Departmental General Order* creating the unit. In summary, it includes the following:

- **Comprehensive Data Collection:** A shots-fired log is maintained in the Crime Analysis Unit and reviewed daily. The GT Supervisor assigns all shots-fired calls for follow-up investigation based upon the evidence located at the scene by first responding patrol officers. Attempts are made to determine whether there is additional Crime Gun Intelligence (CGI) to be gathered through neighborhood canvassing, security camera images or other means.
- **Timely NIBIN Entry:** The GT NIBIN Technician performs daily entry of evidence and test-fires into NIBIN through the Department's IBIS system reviewed by the ATF National NIBIN Correlation and Training Center (NNCTC).

- **NIBIN Lead Follow Up:** When NIBIN Leads are returned from the NNCTC, the GT Supervisor assigns them for investigative follow-up. Should the lead involve another unit's case (i.e., Homicide / Robbery), the GT serves in a supportive role to assist that unit as needed. The leads are categorized in a tiered system for priority purposes in terms of ensuring a timely response. Bi-weekly GT meetings are held to share information on the progress of the assigned cases.
- **Crime Gun Intelligence Leveraging:** As part of the Department's Project Safe Neighborhoods initiative, the GT Supervisor reviews every gun case made by CPD officers. Acquisition and disposition history of the firearm are traced through ATF eTrace. Local, State and National record checks are conducted on each named defendant to determine whether he or she is prohibited from possessing firearms under Federal law. GT investigators assist other CPD personnel to ensure timely completion of all evidence needed to prosecute such cases in Federal Court. The GT facilitates a bi-weekly meeting with members of the District Attorney's office, United States Attorney's Office, ATF and other interested individuals to share and leverage Crime Gun Intelligence on these cases and NIBIN Leads.

The National Public Safety Partnership (PSP)[53] was established in June 2017 by the U.S. Department of Justice (DOJ) in response to an Executive Order. PSP enables cities to consult with and receive coordinated training, technical assistance and an array of crime fighting resources. PSP focuses on data-driven evidence-based strategies tailored to the needs of the participating cities.

53 Department of Justice, The National Public Safety Partnership, retrieved from https://www.nationalpublicsafetypartnership.org, on September 24, 2019.

GRIP: Santa Clara County, CA

The *Gun Related Intelligence Program* (GRIP) was founded in 2017 by the Santa Clara County District Attorney's Office Crime Strategies Unit. The mission of GRIP is to solve gun-related crimes through the analysis of Crime Gun Intelligence and to successfully prosecute the violators. Gun violence reduction is the primary focus of the Crime Strategies Unit, and GRIP functions as a full-time Crime Gun Intelligence Center, based on protocols established by the International Association of Chiefs of Police.

Through timely development and dissemination of Crime Gun Intelligence (both from NIBIN Leads and weekly intel analysis), GRIP staff oversee the streamlined collection, submission, processing, analysis and feedback regarding shootings in the county. GRIP is involved in streamlining gun policy on multiple fronts including: the county-wide training of law enforcement agencies, the coordination of multi-agency meetings, and the facilitation of data-sharing among forensic personnel, investigators and prosecutors. Through GRIP agencies have been trained to collect and submit all eligible firearms and casings to the forensic lab in a timely fashion. All eligible evidence is entered into NIBIN. If the firearms examiner feels there is a possible NIBIN Lead, the following GRIP process begins:

1. **LAB:** NIBIN Lead information is emailed from the Crime Lab to the GRIP Lead Analyst.

2. **LEAD EMAIL:** The GRIP Lead Analyst reviews the NIBIN Lead and forwards it by email to the lead case investigator(s), copying the Supervisory Deputy District Attorney of the Crime Strategies Unit and a designated law agency point of contact for Crime Gun Intelligence (CGI). The email also serves as: 1) a request for all related case files, 2) an inquiry to determine if confirmatory examinations are needed and 3) an offer to provide GRIP analytic case support.

3. **TRIAGE:** GRIP analysts triage the cases to determine appropriate follow-up (e.g., investigation, prosecution).

4. **SUPPORT/DISCUSSION:** Weekly GRIP meetings are held during which the key stakeholders discuss next steps.

5. **DATA ANALYSIS:** GRIP analysts maintain metrics in "GRIP tracker" (e.g., location, caliber, etc.) for analysis.

6. **REPORT:** GRIP provides weekly reports for stakeholders, analyzing new NIBIN links, and gun crimes in the county.

7. **MAINTAIN:** GRIP analysts are responsible for maintaining CGI on ALL pertinent gun crime in the county.

Pittsburgh Police Department: Mapping and Analyzing NIBIN Hit Data and LIMS Data

The Pittsburgh Police Intelligence Unit imports NIBIN Hit data and leverages it with data from the lab's Laboratory Information Management System (LIMS) for trend and pattern analysis using software called Analyst Notebook.

ATF Comprehensive Crime Gun Intelligence Strategies

In the late 1990s, ATF pioneered the concept of *Regional Crime Gun Centers* to analyze patterns and trends that can be detected through the comprehensive tracing of recovered crime guns and the cross-referencing of investigative data including NIBIN data.

ATF's promotion and programmatic guidance of *Comprehensive Crime Gun Intelligence Strategies* greatly expands upon earlier concepts. For example Comprehensive CGI Strategies cover the identification of crime gun sources and the identification and stopping of armed criminals quickly—before they have an opportunity to reoffend. These strategies help collect the strategic crime-data that policy makers and administrators need in order to make resource allocation decisions, and the performance data needed to understand what is working, and what is not.

In 2018, ATF and the National Crime Gun Intelligence Governing Board published "*Disrupting the Shooting Cycle: A best practices guide for implementing a Crime Gun Intelligence program.*[54] In order to implement and maintain a timely and effective Crime Gun Intelligence program, the following practices are recommended:

- Comprehensive collection of all ballistic evidence. CGI focuses on ballistic evidence that can be collected, screened, and analyzed to provide connections between events and people.
- Implement policy to comprehensively collect and submit all cartridge cases and test-fires into NIBIN.
- Gunshot detection alert systems can enhance collection by notifying law enforcement of shooting events that are not reported by citizens.
- Timely submission of evidence into NIBIN.

54 https://crimegunintelcenters.org/wp-content/uploads/2018/09/CGI-Manual-Best-Practices-ATF-27-AUG-18.pdf

- The NCGIGB recommends that police agencies submit fired cartridge cases and recovered crime guns to their NIBIN site within 24 hours of collection.
- Timely and accurate firearms trace requests for all recovered crime guns.
- Trace requests should be made the same day as NIBIN submission.
- Detailed documentation of circumstances surrounding evidence recovery.
- Implement policy for responding law enforcement officers in areas where shots have been fired to support community outreach and awareness of law enforcement efforts in addressing gun violence.
- Timely transfer of all NIBIN Leads to an intelligence unit such as a Crime Gun Intelligence Center.
- NIBIN Leads should be processed for additional intelligence that can add value to the lead, and should include things such as department incident and supplemental reports, cell tower, cell phone and social media analysis, gunshot detection system alerts, license plate readers and crime camera images.
- Timely dissemination of intelligence reports to investigators.
- A succinct intelligence report containing key findings of analysis such as maps, graphical representations of linkages, and person/suspect profiles should be provided in as timely a manner as possible.
- Follow up or higher-level intelligence analysis can be conducted and provided to investigators as investigative circumstances warrant.
- In instances where NIBIN Leads or Crime Gun Intelligence reveals a lead that has significant impact on public safety, immediate communication of that raw information to investigators is critical.
- Appropriate investigative follow up on CGI leads.
- Coordinated prosecution.
- Crime Gun Intelligence links guns to shooting events, thefts and trafficking. A single homicide case is often expanded through CGI to include additional violent crimes, additional offenders, and multiple jurisdictions. Prosecution of violent gun crime and firearms offenses no longer occurs in a vacuum.

In November 2018, the International Association of Chiefs of Police (IACP) adopted a resolution[55] in support of ATF best practices. Entitled *Support for Development of Comprehensive Crime Gun Intelligence Strategies,* the resolution:

1. Strongly encourages all law enforcement agencies to establish protocols to ensure recovered firearms and other ballistic evidence is appropriately subjected to eTrace, NCIC, NIBIN, DNA swabbing and latent fingerprint and trace evidence examinations.
2. Strongly supports the creation of Comprehensive Crime Gun Intelligence Strategies.
3. Urges all agencies to review the ATF and National Crime Gun Intelligence Governing Board's Best Practices Guide and consider the establishment of such strategies to better coordinate and support firearm-related criminal investigations.

Denver Crime Gun Intelligence Center (CGIC)

The Denver Crime Gun Intelligence Center (CGIC) targets armed criminals operating in the greater metro region by following the trail of information extracted from inside and outside their crime guns. Moreover, it stops shooters in their tracks before they can do more harm.

Here's how it works:

1. Police in City X make a routine traffic stop. The driver, a convicted felon, has a loaded handgun in his waistband.
2. He is arrested for unlawful possession of a firearm.
3. As part of a Crime Gun Intelligence strategy the firearm is test-fired, imaged and searched through the National Integrated Ballistic Information Network (NIBIN) within a 24-hour turnaround. This is done to determine, through ballistics markings on the test-fired cartridge cases, in which crimes (if any) the gun may have been used.
4. As part of the protocol of the center, the firearm is also traced through the ATF National Tracing Center in order to determine the acquisition and disposition history of the firearm. The NIBIN check helps police determine that the gun in possession of the driver had been used in a murder a week before, in the next town over.

55 IACP Resolution No. FC.07.t2018. *Support for Development of Comprehensive Crime Gun Intelligence Strategies*. 2018. Accessed at www.theiacp.org/sites/default/files/View%20the%20recently%20adopted%202018%20Resolutions.pdf on January 24, 2019.

5. The crime gun trace reveals that the pistol had been purchased the previous month by a woman who turns out to be the girlfriend of the driver.
6. She admits to being a "straw purchaser"—a person who unlawfully purchases firearms on behalf of a person prohibited from acquiring them.
7. Interviews with the girlfriend and additional cross-checks determine that the girlfriend also unlawfully diverted several other firearms to the felon and his criminal associates.

The processing of firearms through the NIBIN and eTrace networks can quickly turn a routine traffic stop into the prosecution of an armed and dangerous criminal as well as the person who unlawfully armed him and his confederates.

Houston Crime Gun Strike Force[56]

The *Crime Gun Strike Force* (CGSF) is an investigative component within the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) Houston Field Division (HFD) that is dedicated solely to intelligence-driven targeting of violent offenders and the timely follow-up of Crime Gun Intelligence leads through well established protocols. These protocols align with the Attorney General's Project Safe Neighborhoods initiative focus on violent crime, and include the full range of Crime Gun Intelligence (CGI) such as ballistic evidence and crime gun processing, timely lead generation, and robust and effective intelligence. In order to address violent crime from multiple angles, the CGSF consists of two coordinated, investigative groups: one unit devoted to immediate follow-up on NIBIN/CGI leads and disrupting the shooting cycle, the second to use CGI to identify and target violent groups and gangs committing armed commercial robberies and armed carjackings, strategically removing these offenders responsible for the violence.

Stakeholder Management

The CGSF has developed effective partnerships with state, local, and federal law enforcement in the realm of violent gun crime, and fostered relationships with local investigators, forensic counterparts, state and federal prosecutors, and other appropriate stakeholders specific to violent gun crime. These assignments were formalized by an MOU in March 2019 among all partner agencies to include the Houston Police Department (HPD), Harris County Sheriff's Office (HCSO), Texas Department of Public Safety (DPS), Federal Bureau of Investigation (FBI), Homeland Security Investigations (HSI), United States Postal Inspection Service (USPIS), Harris County District Attorney's Office (HCDA), United States Attorney's Office (USAO), Houston Forensic Science Center and the Harris County Institute of Forensic Sciences.

56 This section courtesy of the ATF Houston Field Division.

The CGSF holds weekly coordination meetings for all participants and stakeholders to include assigned prosecutors and forensic counterparts to track leads and successes, share information and intelligence, and solicit input for continuing improvement. Executive level meetings will assess the CGSF progress.

Accountability and Performance Measurement

Success of ATF CGSF operations will go beyond arrests. As a specialized group focused on intelligence-driven operations needs appropriate success criteria that may not apply to standard enforcement groups. The CGSF is closely interrater with state and local enforcement operations relating to violent gun crime and therefore, may be involved in activity that enhances a local investigation. This investigative activity is a critical measurable criteria in that a percentage of CGI leads will be directly related to the success of state level violent crime investigations.

Thus, in order to ensure the success of a CGSF initiative and establish a sustainable plan and framework to reduce violent crime within the AOR, the overseeing field division has:

- Implemented investigative strategies rooted and strictly focused on CGI
- Designated two investigative groups - one for the immediate follow-up on NIBIN Leads and the disruption of the shooting cycle and the second group to investigate armed commercial robberies and armed car jackings
- Continued coordination with local NIBIN sites and partners to ensure comprehensive and timely NIBIN processing
- Collect, analyze and refer all NIBIN and CGI leads
- Continue to forge key working relationships with and recruit critical resources from federal and state prosecutors, state and local law enforcement, and forensic laboratories
- Will enhance local violent crime reduction activities through participation in community and public safety programs.

Additional unique measurements of success would include:

- Clearance rates of unsolved NIBIN linked shootings.
- Clearance rates of armed commercial robberies and armed car jackings.
- Presenting CGI related evidence that results in the pre-trial detention or sentencing enhancement of a defendant.

- Incarceration of a violent offender, identified through CGI processes and Strike Force activity, regardless of jurisdiction, charged violation or sentence exposure.
    - This includes such things as a known shooter targeted and held on an outstanding warrant with a goal to perfect additional violent crime related charges.
- Firearm possession charges against a defendant related to a firearm, shown through CGI, to have been used in a violent crime(s).
- Charging or interdiction of firearms diversion offender, which CGI demonstrates, is directly related to violent crime.
- The proactive recovery of crime guns that CGI shows were used in multiple shooting events.
- Number of CGI leads resulting in a federal or state arrest of a shooter.

IACP Model Policy for Firearm Recovery

In July of 2018, the IACP formulated and published a *Model Policy for Firearm Recovery*. The IACP's introduction states that: "With violence involving firearms dominating the news headlines, it is crucial that all law enforcement agencies have timely and sustainable protocols for the recovery and forensic processing of all firearms and firearm-related evidence". This policy covers the initial response to incidents involving the recovery of firearms and fired evidence, and its collection, handling and transportation, documentation of the scene and interviews, highly recommended forensic tests and database queries, such as NCIC, eTrace, NIBIN. **The Model Policy is accessible to all IACP members through the Policy Center's On-line Resources at: www.theiacp.org/resources/policy-center-resource/firearm-recovery.**

Critical Elements

- Hold regular meetings to share all information developed from inside and outside the gun in taking the presumptive approach with the operational stakeholder partners.
- Leverage output information such as hits, crime gun trace data, fingerprints, DNA, gun crime locations, and types of ammunition used.
- Collaborate routinely with stakeholder partners to improve tactics and strategies and develop new ones to maximize outcome value.

Key Considerations

- Expect the participation of key operational stakeholders at regularly scheduled meetings to ensure that information about relevant tactics and strategies is shared among all appropriate stakeholders.
- Establish the protocol for holding regular meetings with operational stakeholders to share recently developed information and provide updates on follow-ups, making leveraging for more outcome value an agenda item for discussion at the stakeholder meetings.
- Define the types of data (e.g., ballistic hits, crime gun traces, and hot spots) and how it will be managed and integrated into the program.
- Maximize the use of technology for leveragability and sustainability (e.g., electronic mapping and intelligence software).

Summary

The Most Important Thing
Leverage the various output data (e.g., ballistic hits, crime gun trace data, fingerprints, DNA, exhibit data) so as to improve upon current tactics and strategies, develop new ones, and maximize the crime solving and prevention value for the public.

The Next Step
The next chapter discusses the fundamentals of task number thirteen of *The 13 Critical Tasks*—Improving Programs.

TASK 13

Improving Programs

Why the need to improve?

In the previous chapter, the responsibility for continuous improvement of the day-to-day operations required when taking the presumptive approach fell squarely on the shoulders of the tactically oriented operational stakeholders. This chapter brings that responsibility full circle, back to the strategically oriented policy stakeholders who were implicated in *Task 1: Managing Stakeholders*. Both groups must meet at this juncture.

Improvements can best be identified by collecting feedback from each of the stakeholders. Their concerns must be addressed or the program will be inefficient and may even fail.

When any new program is implemented, "bumps in the road" are to be expected. They must be anticipated; they are not excuses to stop, but rather represent opportunities to become better. To reinforce this point, consider the case study below.

CASE STUDY: TRINIDAD AND TOBAGO

During the first 26 months of operation of the IBIS system, personnel at Trinidad and Tobago's Forensic Science Centre were disappointed that only 11 ballistic evidence matches had been generated and confirmed. Questions were raised about the value of the government's crime fighting investments. A collaborative effort was launched to improve the ballistics program.

Attention centered on the increased workloads caused by rising levels of gun violence, and the mounting ballistic evidence backlog. Staffing levels were a critical issue and it would take many months to recruit and train new people. In the meantime, the backlogs continued to build, causing significant delays that would result in armed criminals remaining free.

Driven by the need for improvement, the Forensic Science Center developed an innovative and two-pronged approach to solving the problem. They began recruitment to increase the number of firearm examiners from three to seven. At the same time, they contracted the services of International Resources Group of Washington, D.C., to provide three qualified firearm examiners for a period of one year. These fully-trained and qualified expert resources were able to immediately begin work on eliminating the ballistic evidence backlog that had grown to over 2,200 cases, ranging from simple firearm possession to murder.

By implementing staffing (people) and process improvements intended to maximize the IBIS technology's potential, the number of confirmed IBIS hits rose dramatically from 11 to almost 300 in just 10 months! One hit gives an investigator leveraging power to develop new leads from no less than two events. Incredibly, the new forensic team observed a hit ratio of about 50 percent on evidence discharged from auto-loading firearms, thus indicating a pattern of repetitive crime gun use. The Trinidad and Tobago case study is an example that program sustainability is dependent upon continuous improvement.

As the case study illustrates, the initial investment of time and attention to developing objective performance measures will provide significant returns in the ability to quickly and accurately focus on real issues, and avoid the time wasting entanglements of misleading perceptions.

While technology applied through good processes can help people make their programs efficient and effective, in the end, only people have the ability to make the decisions and take the actions required to make a program a sustained success.

Recommended Best Practices

New York COMPSTAT

As described in earlier chapters, COMPSTAT provides a sustainable method for maximum intelligence sharing based on four tenets: (1) Accurate and Timely Intelligence, (2) Effective Tactics, (3) Rapid Deployment, and (4) Relentless Follow-up and Assessment. It is this fourth tenet that is particularly relevant to this critical task. Follow-up and assessment of results are an essential part of the process. Data is presented on a week-to-date, prior 30 days, and year-to-date basis, with comparisons to previous years' activity. Precinct commanders and members of the agency's top management can easily discern emerging and established crime trends, as well as deviations and anomalies, and can easily make comparisons between commands.

ATF and National Crime Gun Intelligence Board

The *National Crime Gun Intelligence Center Initiative*, a project of the *National Resource and Technical Assistance Center for Improving Law Enforcement Investigations* (NRTAC) describes the National Crime Gun Intelligence Board as follows:

> *National Crime Gun Intelligence Governing Board, which is an ATF administered body consisting of chiefs of police, forensic laboratory directors, ATF executives, and executives from state and federal prosecutor's offices. The Board advises and makes recommendations on national policy related to Crime Gun Intelligence and issues best practices for local Crime Gun Intelligence programs. These standards, which have been issued to all NIBIN sites, include a requirement to process and enter ballistic evidence into NIBIN within two business days of receipt from the submitting law enforcement agency.*[57]

ATF Crime Gun Intelligence Experts

ATF has developed a training program to develop a cadre of Crime Gun Intelligence experts. Assigned to each of ATF's 25 field divisions, these CGI experts serve as valuable resources to ATF and its federal, state and local partners in developing, supporting and improving Crime Gun Intelligence programs.[58]

57 www.crimegunintelcenters.org

58 For more information contact your local ATF Office: www.atf.gov/contact/local-atf-offices

Ultra Electronics Forensic Technology Crime Gun Intelligence Seminar

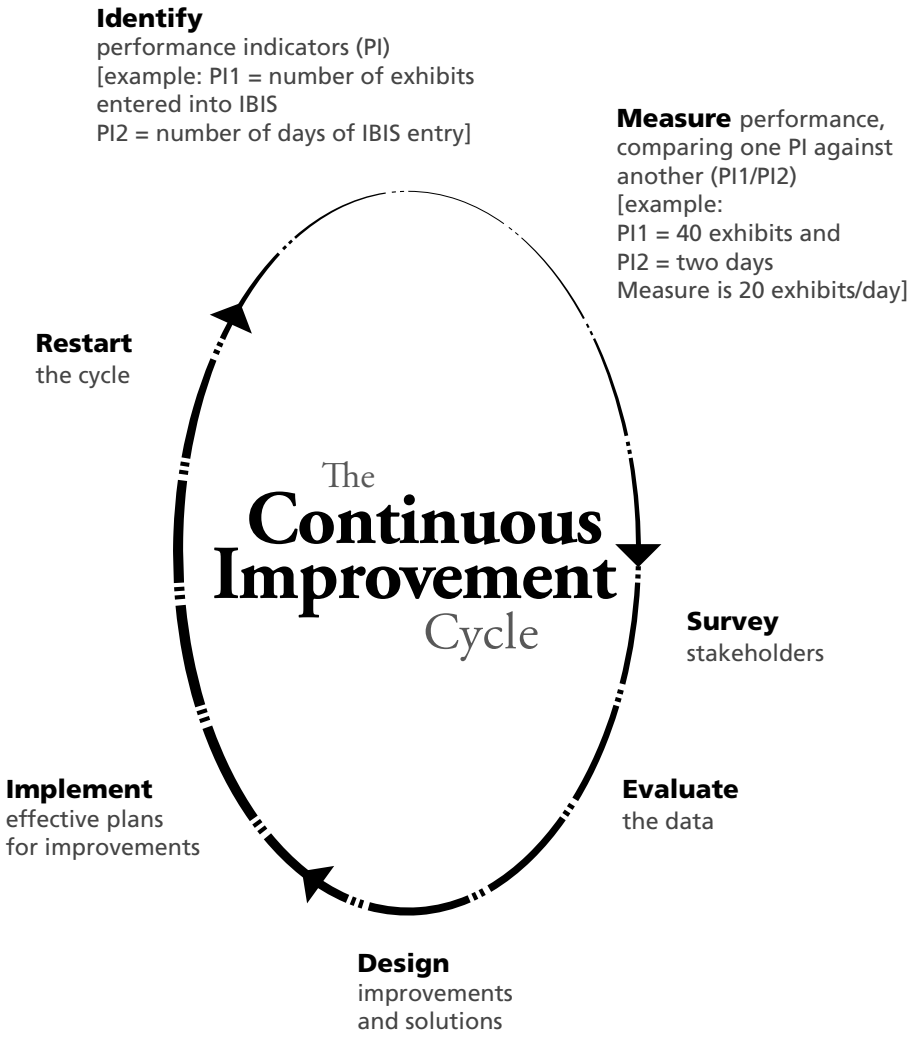
The Crime Gun Intelligence Seminar is a one-day event in which practitioners discuss an approach to solving firearm-related crime, with a particular focus on the implementation of the IACP-recommended Regional Crime Gun Processing protocols.

This approach revolves around three factors—people, processes, and technology—and leads to more effective coordination between investigators, forensic science laboratories and prosecutors. Investigations into crimes involving the use of firearms can be broken down into three distinct phases:

1. Respond & Collect,
2. Extract & Analyze,
3. Identify, Arrest, & Prosecute.

Information fuels investigations and **evidence** powers prosecutions. This interactive seminar helps attendees identify the gaps between each phase of an investigation. It also guides the development of strategies to help bridge these gaps through the prioritization of leads and the direction of resources and budgets with the goal of reducing firearm violence in communities.

The graphic below illustrates the continuous improvement cycle:



Critical Elements

- Conduct day-to-day, operationally-oriented program improvements through tactical stakeholder collaboration.
- Use performance measurements and stakeholder feedback to drive improvements.
- Periodically bring the operationally-oriented stakeholders and the strategically-oriented stakeholders together to evaluate program outcomes and identify what is working and what is not.

Key Considerations

- Ensure the continuous collection and analysis of stakeholder feedback.
- Ensure the creation of objective performance measures and related reports.
- Institute a regular process for identifying and implementing improvements.

Summary

The Most Important Thing
Conduct regular program improvement reviews to help sustain the program by alerting stakeholders to problems in a systematic way. Some problems and slow success rates in the beginning are to be expected—they are not reasons to stop, but are a challenge to do better.

The Next Step
The next chapter discusses the modus operandi that is vital to successful execution of *The 13 Critical Tasks*—Regional Crime Gun Protocols.

Regional Crime Gun Protocols (RCGP)

Why the need for protocols?

Readers may remember the Tate-LaBianca murders that occurred over 50 years ago in Los Angeles. Firearm evidence at the scene of that crime clearly identified the make and model of the murder weapon. For several months, police issued a lookout for the weapon across the North American continent, only to finally learn that the gun that was used by Charles Manson's cult followers had been sitting in the LAPD's property room all along.

The point of this vignette is not to highlight an oversight of the LAPD: it is among the most innovative law enforcement agencies in the world today, and one of the most successful at employing the presumptive approach when investigating crimes involving the use of firearms.

The point is to highlight the fact that even today, murder weapons continue to lie undetected in police department property rooms. The challenge of tracking the gun and its associated evidence in murder and assault cases has become even more difficult. Too often, young criminals rely on guns to settle disputes and frequently travel across police jurisdictions in the course of committing their crimes. In the "thugs-and-guns" world, a vicious cycle exists, as one murder becomes the motivating force for the next. This results in more guns being used in more shootings, thereby generating more evidence and information for the criminal justice system to process.

Delays in processing that evidence and in generating the leads that help move investigations forward may result in more crimes being committed. Investigators, forensic laboratories, and criminal justice agencies have to keep pace.

Police must rely upon the actions of police in other jurisdictions to solve cases. A gun seized by police in one city may well be the missing piece of evidence in a murder case being investigated by police in a neighboring city. With gang and

gun violence being so regional, the scope of the presumptive approach must be regional as well. Therefore, any sustainable solution must involve the integration of networkable technologies like IBIS and eTrace in order to develop and share crime gun information across multiple jurisdictions within a given region.

A *Regional Crime Gun Protocol* (RCGP) based on the presumptive approach can provide an effective and sustainable solution ensuring valuable information for solving gun related crimes within a particular region makes it back across a city line.

RCGP

An RCGP is defined as follows: a set of predefined and consistent actions taken by police and forensic personnel that are designed to generate maximum actionable intelligence from firearms and ballistic evidence encountered during criminal investigations conducted within those geographical areas in which armed criminals are most likely to be crossing multiple police jurisdictions.

The substance of the presumptive approach is reflected in the two main objectives of the RCGP: The first is to ensure that the valuable information generated from inside and outside a gun is efficiently and effectively extracted from all guns taken into custody as a result of criminal use and possession, and from every piece of ballistic evidence found at a crime scene. This objective will help generate both tactical and strategic intelligence for law enforcement.

The second objective is to ensure that the intelligence is generated, disseminated, and used by all of the law enforcement agencies within a region that require the information. While a shooting incident may occur in one jurisdiction, the evidence of that incident, such as the murder weapon, may be found in another jurisdiction. It is also common for shooting incidents that happen in one city to spill over into another. Armed criminals routinely cross into neighboring jurisdictions because of habitual travel patterns and other associated criminal activities, such as drug trafficking.

An RCGP is similar to the presumptive approach programs discussed previously and differs only in the respect that it requires the collaboration and agreement of multiple law enforcement agencies within the same "affected crime region"[59] to follow the same crime gun and evidence processing protocols. The regional aspect of an RCGP is designed to avoid situations in which police officers from one police agency continue to search for a murder weapon on the streets of their city while the gun sits unnoticed on the property room shelf of a neighboring police agency. For example, a gun seized from a person in a car-stop in the suburbs could

59 Geographical area in which armed criminals are most likely to be crossing multiple police jurisdictions.

be critical to the solution of a case in a neighboring city, and vice versa. This was the situation that Alabama law enforcers faced for six years in the case of Hazel Love previously mentioned in *TASK 4 – Collecting Firearm and Related Evidence*. Here is the story again.

CASE STUDY: MCCALLA, ALABAMA

In March 1996, the Jefferson County Sheriff's Office investigated a home invasion that became a robbery resulting in the murder of Hazel Love, a 68-year-old woman in McCalla, Alabama. Investigators recovered several discharged cartridge cases at the scene and, later, bullets at the autopsy. The evidence was submitted to the Alabama Department of Forensic Sciences lab (ADFS) in Birmingham. IBIS operators at the ADFS lab entered the evidence into the NIBIN database.

In September 2000, police in Adamsville, Alabama, conducted an investigation of a felon who was in unlawful possession of a firearm. At the time, a firearm was retained as evidence and placed on a shelf in the police department's property room.

In December 2002, Birmingham Police investigating a home invasion learned of the firearm stored in Adamsville. Investigators requested a NIBIN check on the firearm. Two weeks later, the ADFS lab surprisingly reported that there was no NIBIN link to the Birmingham home invasion but there was indeed a link between the Adamsville firearm and the 1996 murder of Hazel Love in McCalla. The match was later confirmed by a firearms expert.

In February 2003, the Jefferson County Sheriff's Office arrested two men who were linked to the Adamsville firearm for the murder of Hazel Love as well as for other serious crimes across the county. One of the suspects is now serving multiple life sentences without the chance of parole.

Certainly, this coast-to-coast relationship is not an everyday occurrence. The more common occurrence is a relationship existing across city, county or contiguous-state lines.

That said, the old saying applies: "We don't know what we don't know". But ATF wants to know. And it is working with Ultra Electronics Forensic Technology toward a solution that would look for NIBIN Leads and Hits across the entire NBIN network in a manner that does not impact the normal daily operation of the network.

CASE STUDY: WEST ORANGE, NEW JERSEY

As Criminals move, evidence trails near and far. [60]

> On June 25, 2014, while stopped at a traffic light in northern New Jersey, 19-year-old Brendan Tevlin was shot multiple times.
>
> At that time, Ali Muhammad Brown was a wanted man: Seattle authorities had identified him as a suspect in the murder of two men in what they described as a hate crime committed in that City on June 1, 2014. Police following up on a robbery in southern New Jersey believed that Brown had made his way across the country and was hiding in New Jersey.
>
> Cartridge case evidence collected at the scene of the Tevlin shooting was imaged and searched through the NIBIN network. Results indicated the gun that killed Brendan Tevlin in New Jersey had also been used to murder the two men in Seattle.
>
> Police found Brown living in the woods not far from the Tevlin shooting. He was still in possession of the murder weapon which would ultimately be linked to a fourth murder back in Washington State. Brown was charged with felony murder, carjacking and robbery in connection with the Tevlin murder and would later plead guilty.
>
> Prosecutors described Brown's actions as terrorism saying that: "The defendant was on a bloody crusade, executing four innocent men ... with the same murder weapon, over the course of approximately two months, and all under the common and single scheme of exacting 'vengeance' against the United States government for its foreign policies".

This case demonstrates the need for the collection and sharing of ballistic data from crime scenes and from firearms seized by police within the affected crime region. Until this was done, the murder of Hazel Love remained unsolved. One department's forgotten evidence is another department's crucial evidence. In this case, neither department knew of the other's evidence.

While the Alabama law enforcers eventually got it right, not all agencies are so fortunate. The presumptive approach is an effective aid in the investigation of gun crime and is optimized when the right people, processes, and technology are in balance and institutionalized within the entire affected crime region. Today, gaps in crime gun tracing and ballistic testing are critical to regionalizing the presumptive approach. For example, many police agencies throughout

60 David Boroff, New York Daily News. *Seattle man indicted for terrorism in 2014 shooting death of New Jersey teen*, July 03, 2015. Accessed January 24, 2019 at www.nydailynews.com/news/crime/seattle-man-indicted-terrorism-slaying-n-teen-article-1.2280856

the United States do not fully utilize NIBIN and eTrace, therefore, they cannot effectively exploit the tactical and strategic value of the information these systems can generate. As of this writing, police in Idaho, New Hampshire, Maine, North Dakota, South Dakota, Vermont, Wyoming, Montana, and Hawaii do not have IBIS technology implemented within their states. They may not be making use of, or have ready access to alternatives such as public or private NIBIN service providers (e.g., the ATF Lab or ATF NNCTC services).

Observers may note that the states mentioned above are not the first to come to mind when one thinks of urban violence. Yet all of them have cities with crime problems involving drugs, gangs, and guns. More importantly, when we consider that a major strength of a ballistic identification network like NIBIN is the fact that it is national, then each state becomes a link in a chain—a chain that is only as strong as its weakest link.

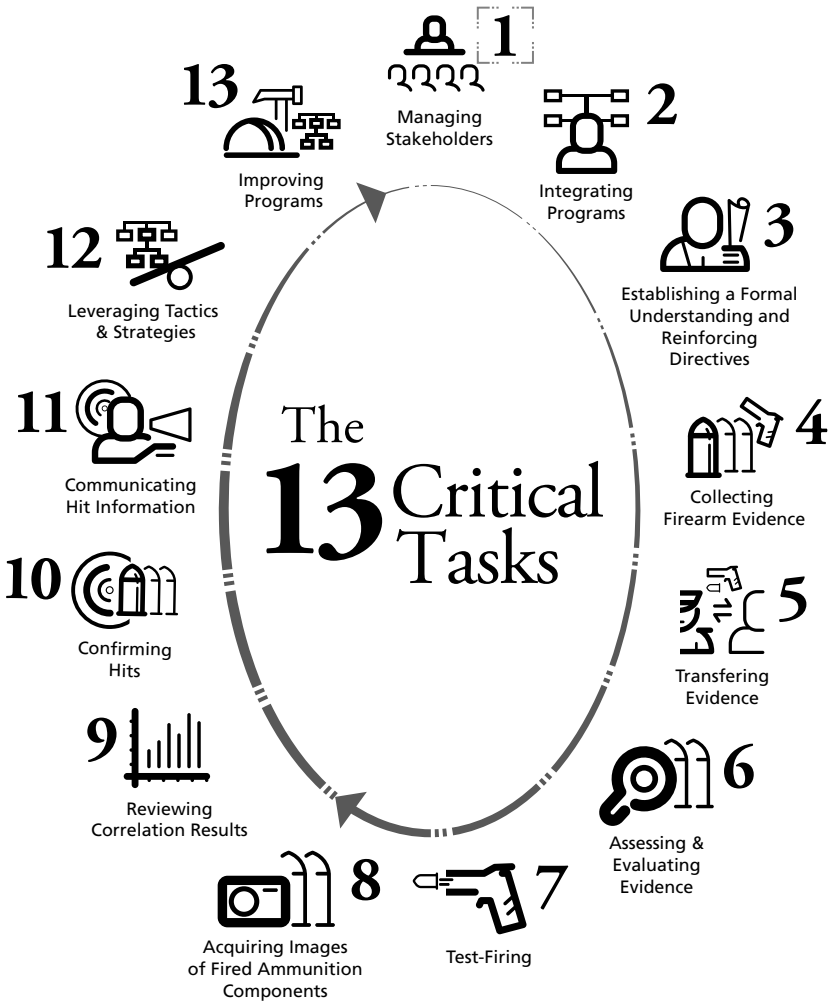
Consider how geographical region factors into to this. Maine, New Hampshire, and Vermont, are three of the six New England states. They are linked via interstate highways to major metropolitan areas in Massachusetts and New York, where drug and gang violence is much more prevalent. Just as heat flows from hot to cold, drugs are transported surreptitiously from south to north into the New England region, along major transportation corridors. Guns and illegal commodities move along these same corridors as well. The gun found during a drug raid in Boston may well represent the "make or break" piece of evidence for police in Providence, Rhode Island, who are investigating a gang-related murder. The reverse is also true. Consider this very plausible scenario: a car bearing New York plates is stopped in Manchester, New Hampshire, for speeding and then impounded because of an expired registration. It gets towed to the police lot and inventoried. Police find a handgun with obliterated serial numbers. They charge the driver with the crime and store the gun in the evidence vault. Without a NIBIN check, they have no idea that the gun was used in a murder in New York.

The illustration below testifies to the previous point: it shows a gun recovered in Boston was linked through NIBIN to 14 shooting events with 19 victims. Three of the crimes occurred in other cities within the affected crime region. Three of the crimes occurred in other cities within the affected crime region (Massachusetts), but one of the crimes involved a shooting in Rhode Island. Because Rhode Island was participating in the program, NIBIN was able to suggest the link.

The illustration makes it clear that NIBIN value is a "two-way street" and that police in both big and small cities can benefit from the information provided by a ballistics network like NIBIN. As in the Hazel Love case, the power of ballistics technology was leveraged across jurisdictions through a network, and this action proved vital in helping police solve her murder.

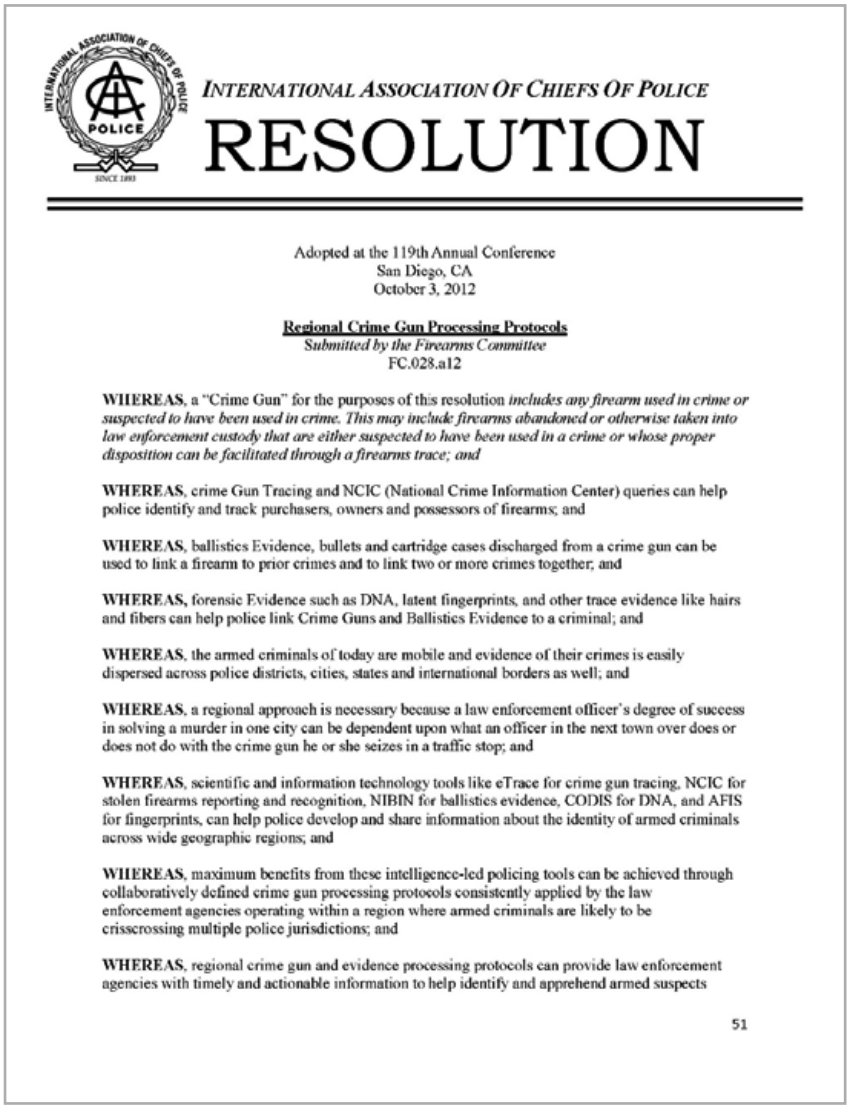
While gun crime can be generally viewed as a hometown security issue, it can also be seen as a homeland security issue for regions that include certain international borders. A country that takes the presumptive approach to collect data on regional cross-border crime will, over time, amass a formidable inventory of data for use in: solving crimes, stopping armed criminals and terrorists, generating intelligence, identifying illegal gun markets, and recognizing crime patterns and trends. This comprehensive data can be used by police and policy makers when designing new strategies and tactics to deal with these cross-border problems.

The timely exploitation of information from crime guns and ballistic evidence that is collected across the various affected police jurisdictions **will lead to more links between guns and crimes and to more shooters identified more quickly.** By identifying shooters more quickly, officers can apprehend them before they have the opportunity to re-offend. Consistently applied protocols serve to institutionalize and embed a sustainable solution within the region served.


The
13 Critical
Tasks
1
Managing
Stakeholders
2
Integrating
Programs
3
Establishing a Formal
Understanding and
Reinforcing
Directives
4
Collecting
Firearm Evidence
5
Transfering
Evidence
6
Assessing &
Evaluating
Evidence
7
Test-Firing
8
Acquiring Images
of Fired Ammunition
Components
9
Reviewing
Correlation Results
10
Confirming
Hits
11
Communicating
Hit Information
12
Leveraging Tactics
& Strategies
13
Improving
Programs

Best Practices

IACP Resolution on Regional Crime-Gun Processing Protocols



INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE

RESOLUTION

Adopted at the 119th Annual Conference
San Diego, CA
October 3, 2012

Regional Crime Gun Processing Protocols
Submitted by the Firearms Committee
FC.028.a12

WHEREAS, a "Crime Gun" for the purposes of this resolution *includes any firearm used in crime or suspected to have been used in crime. This may include firearms abandoned or otherwise taken into law enforcement custody that are either suspected to have been used in a crime or whose proper disposition can be facilitated through a firearms trace; and*

WHEREAS, crime Gun Tracing and NCIC (National Crime Information Center) queries can help police identify and track purchasers, owners and possessors of firearms; and

WHEREAS, ballistics Evidence, bullets and cartridge cases discharged from a crime gun can be used to link a firearm to prior crimes and to link two or more crimes together; and

WHEREAS, forensic Evidence such as DNA, latent fingerprints, and other trace evidence like hairs and fibers can help police link Crime Guns and Ballistics Evidence to a criminal; and

WHEREAS, the armed criminals of today are mobile and evidence of their crimes is easily dispersed across police districts, cities, states and international borders as well; and

WHEREAS, a regional approach is necessary because a law enforcement officer's degree of success in solving a murder in one city can be dependent upon what an officer in the next town over does or does not do with the crime gun he or she seizes in a traffic stop; and

WHEREAS, scientific and information technology tools like eTrace for crime gun tracing, NCIC for stolen firearms reporting and recognition, NIBIN for ballistics evidence, CODIS for DNA, and AFIS for fingerprints, can help police develop and share information about the identity of armed criminals across wide geographic regions; and

WHEREAS, maximum benefits from these intelligence-led policing tools can be achieved through collaboratively defined crime gun processing protocols consistently applied by the law enforcement agencies operating within a region where armed criminals are likely to be crisscrossing multiple police jurisdictions; and

WHEREAS, regional crime gun and evidence processing protocols can provide law enforcement agencies with timely and actionable information to help identify and apprehend armed suspects

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quickly thereby denying them the opportunity to re-offend and to perfect stronger criminal cases against them; and

WHEREAS, more armed criminals convicted and Justice served helps to preserve the peace and protect the public; now, therefore, be it

RESOLVED, that the IACP views regionally applied crime gun and evidence processing protocols as a best practice for the investigation of firearm related crimes and encourages law enforcement officials, prosecuting attorneys and forensic experts to collaborate on the design of mutually agreeable protocols best suited for their region.

The protocols should address each of the following critical areas:

- The thorough investigation of each gun related crime including the safe and proper collection of all crime guns & related evidence.
- The performance of appropriate NCIC transactions (e.g. stolen, recovered).
- The timely and comprehensive tracing of all crime guns through ATF & eTrace.
- The timely processing of crime gun test fires and ballistics evidence through NIBIN.
- The timely lab submission and analysis of other forensic data from crime guns and related evidence (e.g. DNA, latent fingerprints, trace evidence).
- The generation, dissemination and investigative follow-up of the intelligence derived from the application of the regional protocols.

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IACP Resolution: Support for the Development of Crime Gun Intelligence Strategies

Support for Development of Comprehensive Crime Gun Intelligence Strategies
Submitted by: Firearms Committee
FC.07.t2018

WHEREAS, a "Crime Gun" includes any firearm unlawfully possessed, used in a crime, or suspected to have been used in a crime. This may include firearms abandoned or otherwise taken into law enforcement custody that are either suspected to have been used in a crime or whose proper disposition can be facilitated through a firearms trace; and

WHEREAS, armed criminals are often mobile, and evidence of their crimes is easily dispersed across police districts, cities, states and international borders as well; and

WHEREAS, the cross-jurisdictional nature of gun violence requires a regional approach because an agency's probability of successfully apprehending and prosecuting an offender can be dependent upon what an officer in the next town over does or does not do with the crime gun they may discover; and

WHEREAS, ballistics evidence, bullets and cartridge cases discharged from a crime gun can be used to link a firearm to prior crimes and to link two or more crimes together; and

WHEREAS, crime gun tracing through ATF eTrace (electronic trace system) and NCIC (National Crime Information Center) queries can help police identify and track purchasers, owners and possessors of firearms; and

WHEREAS, forensic evidence such as DNA, latent fingerprints, and other trace evidence like hairs and fibers can help police link Crime Guns to a criminal; and

WHEREAS, scientific and information technology tools like eTrace for crime gun tracing, NCIC for stolen firearms reporting and recognition, National Integrated Ballistic Information Network (NIBIN) for ballistics evidence, Combined DNA Index System (CODIS), and Automated Finger Print Identification System (AFIS), can help police develop and share information about the identity of armed criminals across wide geographic regions; and

WHEREAS, regional firearm recovery and crime gun evidence processing protocols applied and communicated in a timely manner can provide law enforcement agencies with actionable information to help identify and apprehend armed suspects quickly thereby denying them the opportunity to reoffend and to perfect stronger criminal cases against them; and

WHEREAS, to support this regional collaboration, ATF has been working with partners to establish Comprehensive Crime Gun Intelligence Strategies. ATF and its partners, through the National Crime Gun Intelligence Governing Board (NCGIGB) have developed a Best Practices Guide, which is designed to help agencies accomplish several goals including the identification of armed violent offenders for investigation and prosecution; and,

WHEREAS, a comprehensive Crime Gun Intelligence Strategy can also aid in the identification of crime gun sources, efficient resource allocation, providing decision makers with the most accurate crime data available, and increasing case closure rates, public safety, and the prevention of violent crime committed with firearms. Now, therefore, be it

RESOLVED, that the International Association of Chiefs of Police strongly encourages all law enforcement agencies to establish protocols that ensure that recovered firearms and other ballistic evidence are appropriately subjected to e-trace, NCIC, NIBIN, DNA swabbing and latent fingerprint and trace evidence examinations; and be it

FURTHER RESOLVED, that the International Association of Chiefs of Police strongly supports the creation of Comprehensive Crime Gun Intelligence Strategies and urges all agencies to review the National Crime Gun Intelligence Governing Board's (NCGIGB) Best Practices Guide and consider the establishment of such strategies to better coordinate and support firearms related criminal investigations.

Critical Elements

The 13 Critical Tasks, in balance with people, processes, and technology, can help achieve sustainable firearm crime-solving success across jurisdictions within a given region. The critical elements listed below will lead to the development of regional crime gun protocols.

- **Stakeholder management:** Again, as noted in previous chapters, stakeholders must come together as a group. And because this group encompasses a region, a diverse mix[61] of representation is needed from across the affected crime region—not just from a single jurisdiction.
- **Gap analysis:** An exercise conducted in the latter half of the workshop identifies obstacles and breaks in the current processes, including actions that are not taking place and information that is not being shared. Best practices that have been used successfully by others to manage similar gaps are presented for the group's consideration as possible solutions.
- **Sustainable protocols and substantial benefits:** The new crime gun and evidence protocols must have clear potential to provide substantial benefits, and they must be sustainable. To achieve this, the plan must take the presumptive approach to the investigation of crimes involving the misuse of firearms, and must be balanced in terms of people, processes, and technology. One test to help gauge the potential for success and sustainability of the proposed plan of action is to view it in terms of its ability to achieve one or more of the following criteria: (1) provide the stakeholders with new opportunities to solve and prevent crimes committed with firearms, (2) show differentiation from the existing processes—a better way of doing things, (3) change the "rules of game" for all involved.

61 A mix of participants made up of police, forensics personnel, and prosecuting attorneys from different agencies (including local, state, and federal agencies) within the same affected crime region.

Key Considerations

- **Structured workshop activities:** A facilitated workshop would guide the interdependent stakeholders through the thirteen critical tasks and help stimulate thinking. It can also provide a basis for comparing the presumptive approach to solving to gun crime to current approaches. The workshop and supporting materials create a forum for the diverse mix of, on average, about thirty stakeholders to think and act together. To help achieve this, as a public service, Ultra Electronics Forensic Technology facilitates a series of *The 13 Critical Tasks Workshops* for the law enforcement and forensics communities.
- **Workshop duration:** Workshops can be one or two days in length. A one-day workshop can cover most of the issues and deliver an outline of the people, processes, and technology changes that are needed for a new protocol. A two-day workshop would be needed in order to deliver a more-detailed and complete Regional Crime Gun Protocol. The prime concern is the time and availability of the stakeholders. What is often done to maximize their time is that the large group meets for one day and the outline that is produced from that session is turned over to a smaller working group that creates a more detailed and final draft. The coordination of the final draft for comment and acceptance can be handled by mail, courier, email, or fax.
- **Workshop participants:** Attendees should represent line, supervisory, and management personnel that are representative of the affected law enforcement stakeholder groups across the region. The following stakeholder selection guide is provided by Ultra Electronics Forensic Technology to workshop organizers to ensure workshop attendees benefit from the perspectives of the stakeholders who possess the diverse skills required for the presumptive approach:
    - Patrol
    - Crime scene processing
    - Investigations (local, state, federal)
    - Special units (Intelligence, Gang, Homicide, Firearm Task Forces, etc.)
    - Prosecutors (state and federal)
    - Property and evidence control
    - Forensics (intake, firearm examiners, fingerprints, DNA)
    - Administrators (senior managers, special program managers, etc.)

- **Workshop venue:** Consider the location and facilities as well as the start and end times. Consider contractual labor issues that may apply.
- **Logistics:** There must be a computer projector and a sound system capable of showing Microsoft® PowerPoint® slides and videos with audio tracks on-site. If the venue is large, a public address system may also be necessary. If restaurants or cafeterias are not readily accessible, catering needs should also be considered.
- **Invitation to participants:** Leverage the power of a champion in a position of authority (e.g., Agency head, State's Attorney, U.S. Attorney) and send the invitation under that person's letterhead, with his or her permission.
- Consider providing participants with a Certificate of Achievement if the workshop is considered part of a recorded in-service training requirement.

Summary

The Most Important Thing
Establish a sustainable regional crime gun and evidence processing protocol that is in operation across the affected crime region and is agreed-to and executed by all law enforcement agencies in that region.

The Next Step
The next chapter describes some techniques for identifying the gaps, and balancing the people, processes, and technology needed to create a sustainable crime gun and evidence processing protocol that is capable of delivering substantial benefits to a single locality or region.

Gap Analysis & Balancing Techniques

Where are the gaps?

There is a multitude of activities and interactions which must be properly executed and coordinated across all 13 tasks. As with any complex series of activities requiring close coordination, things can go wrong or "fall through the cracks"—or in other words not get done.

Fourteen years of experience in delivering *The 13 Critical Tasks Workshops* have provided the author with an opportunity to identify recurring patterns which tend to focus attention on certain areas where "gaps" in terms of people, processes, and technology most often occur; gaps where actions can be improperly executed or simply "fall through the cracks" and not be attempted at all.

The areas where the gaps are typically found in terms of people, processes, and technology are listed on the pages that follow.

"People gaps" can generally be found in four areas:

- Stakeholders
- Communications
- Staffing
- Training

The chart below suggests some key questions to begin the gap analysis.

People Gaps	Key Questions for Gap Analysis
Stakeholders	Who are the champions driving the effort? Are all the key agencies represented? Are the three key disciplines represented (police, forensics, prosecutors)? Is there a mix of line, supervisory, and management personnel involved? Is there a ongoing forum for stakeholder collaboration?
Communications	Are communications ongoing between the right people? Are communications clear and well documented? Have the communications been followed-up and are they enforceable? Have the problems been identified and discussed?
Staffing	Are there enough qualified people to meet the current workloads? Is the lack of staffing delaying processes? Will there be enough qualified people to meet future workloads and delivery times? Is the staff being used efficiently and effectively?
Training	Does everyone in the program know their role and what is expected of them? Can more training improve work quality and expand output? Are there opportunities for cross-training and workload redistribution?

"Process gaps" can generally be found in four areas:

- Institutionalization
- Sustainable comprehensive processing
- Actionable intelligence extraction
- Tactical and strategic investigative capital. The chart below suggests some key questions to begin the gap analysis.

Process Gaps	Key Questions for Gap Analysis
Institutionalization	Have the processes been incorporated into the organization's standard operating procedures? Are the current processes being enforced and regularly reviewed for follow-up and completeness?
Sustainable Comprehensive Processing	Is the information inside and outside the gun being fully exploited (e.g., ballistics, crime gun tracing, DNA, fingerprints, etc.)? Is there, at a minimum, a sustained process currently in place for crime gun tracing and ballistic testing? Is the evidence processing being completed in a timely manner to meet the needs of the investigators and prosecutors?
Actionable Intelligence Extraction	Is the output data from inside and outside the gun being analyzed in an efficient and effective manner for maximum actionable intelligence extraction and dissemination to those who need it? Is it being done in a timely manner?
Tactical and Strategic Investigative Capital	Is the information from inside and outside the gun being analyzed for its short-term tactical value and long-term strategic value?

"Technology gaps" can generally be found in four areas:

- Ballistics technology
- Other forensic technologies
- Intelligence technologies
- Leveraging data for sustainable crime solving

The chart below suggests some key questions to begin the gap analysis.

Technology Gaps	Key Questions for Gap Analysis
Ballistics Technology	Is there sole or shared access to ballistics technology? Is the technology part of a network? Is the ballistics technology being fully utilized? Are there unbalanced workloads between agencies that use ballistics technology? Is the technology keeping pace with modernization advancements?
Other Forensic Technologies	Is there sole or shared access to DNA testing? Are there protocols in place to coordinate multiple forensic examinations (ballistics, DNA, fingerprints, and hairs and fibers)? Do the current protocols for multiple forensic testing cause processing delays? Have these processes ever been mapped? What obstacles are faced in accessing these technologies?
Intelligence Technologies	Is the information from inside and outside the gun being mapped along with other crime information for visualization and linkage analysis? Are the mapping and data integration processes sustainable?
Leveraging Data for Sustainable Crime Solving	Is forensic output data and crime data being cross-analyzed (e.g., ballistics data and crime gun trace data (the "what" and the "who"))? Are cross-data links being leveraged for tactical and strategic use? Are relevant regulatory and data systems in place to allow for cross-data links with firearm crime data (e.g., firearm transaction records for crime gun tracing)?

Balancing the Stool

A simple but effective method for helping *The 13 Critical Tasks Workshop* attendees balance the people, processes, and technology involves the use of three flip charts:

Chart One—Processes: On this chart list the proposed new actions or protocols the workshop stakeholders believe need to be carried out under the presumptive approach. For example, the test-firing of all seized crime guns for NIBIN processing.

Chart Two—People: On this chart list the people the workshop stakeholders believe are needed to carry out the listed processes, according to the type of skill required to execute the process. For example, in order to implement the listed process of test-firing all seized crime guns for NIBIN processing, the workshop stakeholders estimate that two additional firearm examiners and three NIBIN lab technicians would be required.

Chart Three—Technology: On this chart list the systems and tools that the stakeholders believe will be required for use by the people who will perform the processes. This chart can also be used to inject technology solutions into the project which have the potential to speed up processes and help make people be more productive. Technology can also help reduce the number of people required to implement a proposed process and help balance the stool.

The three charts provide a flexible and easy-to-work-with visual aid for the stakeholders to use when balancing the people, processes, and technology needed to take a presumptive approach that would work best in their region.

One way to visualize how the charts are used is to consider the actions involved in leveling a camera tripod. Depending on the terrain encountered, you may shorten one leg, extend the second, and leave the third one alone. You continue to adjust, evaluate and readjust the legs of the tripod until you orient the camera in the manner required for the best photo possible under the conditions.

Working the Charts

While facilitating a workshop in 2008, one stakeholder group listed "requirement to test-fire all seized crime guns for NIBIN processing" on the process chart. On the people chart they estimated that the forensics laboratory would need "at least five additional specially-trained personnel to perform the test-firing and data entry".

The stakeholders immediately reached a consensus that the hiring of five additional resources was highly unlikely. On the other hand, the new process to test-fire all seized crime guns for NIBIN processing would be unsustainable without them. As they all stared at the three charts they noticed that the technology chart was blank. That raised the question of whether or not some type of technology could help reduce the requirement for the five additional resources needed to test-fire the seized firearms and process them through NIBIN. The question of technology initiated a discussion among the stakeholders to understand more about the need to hire five additional lab personnel to conduct the process under consideration. They learned that the test-firing process was viewed by some as something that could only be done at the laboratory and therefore the lab would need more people.

Some innovative out-of-the-box thinking on the part of the stakeholders that focused on exploring a technology solution led to the recognition that advances had been made in portable test-firing systems that were safer, smaller, and less costly than a stationary water tank installed in a lab. While working on the technology chart, the group recognized that by acquiring these portable test-firing devices, the test-firing process could be moved outside of the lab and conducted by police officers who worked at the firearm training range and were well-versed in handling firearms. This action would remove the test-fire burden from the lab. The lab would then be responsible for only one part of the new process—the entering of the test-fired exhibits into the NIBIN database. Based on this new workload estimate, it was determined that the lab would now only need to hire one new employee to keep up with the data entry rather than five—a number that would prove much more achievable for a sustainable solution. The three charts were used to find a sustainable way to implement the proposed new process by adjusting the balance between people, processes, and technology.

Summary

The Most Important Thing

Invest the time and effort required to formulate a regionally-focused presumptive approach to the investigation of crimes involving the use of firearms by balancing people, processes, and technology for sustained effectiveness.

The Next Step

The West Palm Beach Police (Florida) developed a crime gun processing protocol that follows the presumptive approach to help improve their effectiveness in mounting a response to the rising levels of gun violence in the city. They realized that their sustained success in investigating gun crimes was tied to what surrounding police agencies were doing (or not doing) with their crime gun evidence—the crime patterns in the Palm Beach County area demanded a regional approach. The next chapter provides a case study of the inputs, outputs, and outcomes of the Palm Beach County Regional Crime Gun Protocol Project.

CASE STUDY

Palm Beach County Gun Crimes Protocol Policy Recommendations

Overview

This case study provides an excellent practical example of the value of *The 13 Critical Tasks* for use in the development and implementation of a policy like the Palm Beach County Gun Crimes Protocol Policy Recommendations. The Palm Beach protocols strike a balance between the people, processes, and technology required to sustain the presumptive approach to the investigation of crimes involving the misuse of firearms.

How It All Began

Over a five month period between August and December of 2004, a series of shootings took place in West Palm Beach, Florida. The shootings were associated with crimes such as robbery, carjacking, and murder. Four people were murdered within the same week, generating in-depth media coverage. Residents were afraid to venture into the central business district and loudly voiced their public safety concerns to the City Administrators. Police were unable to produce actionable leads through traditional "shoe leather" investigative methods as witnesses were reluctant to come forward. Detectives turned their attention to the use of technology to help them generate actionable information in order to advance the investigation.

Below is a brief synopsis of the events that transpired between August and December of 2004:

- **August 29, 2004:** Shots were fired during an altercation between young men at a Steak & Shake restaurant. Expended .40 caliber cartridge cases were collected at the scene, entered into IBIS, and searched against NIBIN.
- **September 25, 2004:** Shots were fired at a local nightclub during an altercation between several young men. Witnesses were uncooperative and would not talk to the police. Fired .40 caliber S&W cartridge cases were collected at the scene, entered into IBIS, and searched against NIBIN. IBIS helped forensic examiners link the evidence to the Steak & Shake shooting the month before.
- **November 4, 2004:** One vehicle pulled up to another vehicle that was stopped at a traffic light outside an IHOP restaurant. The two men in the first vehicle shot and killed the two in the second. They mistakenly believed that the individuals in the second vehicle were the ones involved in the altercation at the Steak & Shake restaurant. Expended .40 caliber and .380 caliber cartridge cases were collected at the scene, entered into IBIS, and searched against NIBIN. The .40 caliber cartridge cases linked to the August Steak & Shake shooting and the September nightclub shooting.
- **November 5, 2004:** A gunman shot at a young man standing in front of a Tiger store in Riviera Beach, FL. The shots blew out the store windows but no one was injured. Fired .40 caliber S&W cartridge cases were collected at the scene, entered into IBIS, and searched against NIBIN. The .40 caliber cartridge cases linked to the August Steak & Shake shooting, the September night club shooting, and the double murder which occurred the previous day.
- **Later that same day:** A robbery was attempted at the Cell Page & Pawn Shop in West Palm Beach, FL. Shots were fired by the perpetrators but no one was injured. Fired .40 caliber S&W cartridge cases were collected at the scene, entered into IBIS, and searched against NIBIN. The .40 caliber cartridge cases linked to the August Steak & Shake shooting, the September nightclub shooting, the double murder, and the shooting at the Tiger store earlier that day.

- **November 7, 2004:** A drive-by shooting took place on Palm Lakes Boulevard in West Palm Beach. Two men sitting inside their vehicle were murdered in a hail of gunfire. More than forty rounds were fired from an assault rifle and a .40 caliber pistol. Fired .40 and 7.62 x 39mm cartridge cases were collected at the scene, entered into IBIS, and searched against NIBIN. The .40 caliber cartridge cases linked to the August Steak & Shake shooting, the September nightclub shooting, the first double murder, the shooting at the Tiger store, and the attempted robbery at the Cell Page & Pawn Shop.
- **November 9, 2004:** Riviera Beach police chased a suspect for an incident unrelated to any of the above shootings. The suspect dropped a .380 caliber pistol and eluded police. He was later identified by witnesses. The pistol was test-fired and the test-fired cartridge cases were entered into IBIS and searched against NIBIN. The .380 caliber cartridge cases linked to the November 4th double murder.
- **December 3, 2004:** A carjacking occurred at an Arby's restaurant in Palm Beach Gardens, FL. Shots were fired and in the course of the confusion, the suspect dropped a .40 caliber Glock pistol. The pistol was test-fired and the test-fired cartridge cases were entered into IBIS and searched against NIBIN. The NIBIN check helped forensics experts determine that the Glock pistol was the instrument of the crime in all of the shootings described above.

Knowing that all of the crimes involved the .40 caliber Glock pistol, police were able to leverage the ballistic evidence from each crime with other forensic evidence: fingerprints, DNA, and surveillance video to identify four suspects. Three suspects have pleaded guilty and are currently serving lengthy federal and state prison sentences. The fourth suspect, as of this writing, is awaiting trial.

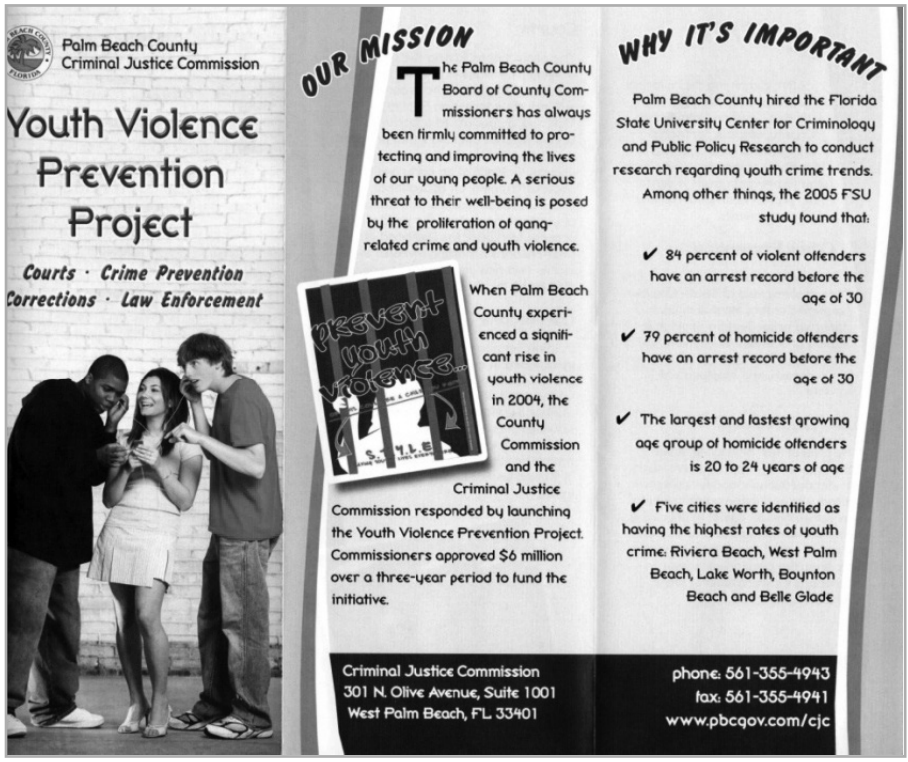
The Glock pistol used in these crimes had been stolen from the vehicle of a Palm Beach County law enforcement officer in March of 2003. About a year later it was acquired in exchange for stolen jewelry by one of the four suspects involved in these shootings.

The People

The arrests in the 2004 spate of shootings helped generate "champions" within the West Palm Beach Police Department who launched a campaign promoting the development of standard protocols for the handling of all firearms and related evidence encountered by the department. The protocols would follow the presumptive approach to ensure every bit of information and evidence would be exploited in order to provide maximum investigative value.

In March of 2005, the Palm Beach County *Law Enforcement Planning Council* (LEPC), representing all law enforcement agencies operating in the county (city, county, state, and federal) formed a working group to develop enforcement- and prevention-focused solutions to address rising levels of firearm-related youth violence. Co-chairing the working group were representatives from the police departments serving West Palm Beach, Riviera Beach, and Mangonia Park. The working group received assistance from ATF while developing one of the enforcement solutions which involved the creation of a standard way in which to process evidence and information associated with gun crimes. The gun crimes protocol they developed involved the integration of a variety of tools and investigative aids including: forensics, technology, crime gun tracing, and structured interviews.

To assist the LEPC and its working group with their task, the Palm Beach County *Criminal Justice Commission* (CJC) hired Florida State University to help collect statistical data on youth violence patterns and trends and to help track the progress and effectiveness of what would become known as the *Youth Violence Prevention Project*.



In November 2005, the working group drafted the West Palm Beach Gun Crimes Protocol implemented at that time solely within the West Palm Beach Police Department with support from the Palm Beach County Sheriff's Office and ATF. In June 2006, a newspaper article in the *Palm Beach Post* set in motion a series of events that would help change the way that firearm crime was dealt with in Palm Beach County.

The article appears in its entirety below.

> ***Gunned down in Palm Beach County: Many wounded by bullets share two local ZIP codes***
>
> *By* Andrew Marra *Palm Beach Post Staff Writer*
>
> *Sunday, June 11, 2006*
>
> *A frightening fusillade echoes on the evening news: A golf course manager shot dead in the pro shop. A suburban Lake Worth man gunned down while walking his dog. A teenage cashier shot in the chest by a sub-shop robber.*

Is Palm Beach County really so deadly?

A Palm Beach Post analysis found that while gun violence plummeted across Florida during the past decade, Palm Beach County grew even more deadly. Shooting deaths increased and the cost of caring for the injured ballooned.

Among the findings:

- *The county claimed two of Florida's five most violent ZIP codes in 2004, measured by the number of gunshot wounds treated at hospitals.*
- *The number of people killed by gunfire in Palm Beach County last year remained roughly the same as 10 years before, even as shooting deaths dropped 25 percent across Florida and 48 percent in Miami-Dade County in that time.*
- *Palm Beach County hospitals billed an average of $55,000 to treat each shooting victim in 2004, up 88 percent from 1994.*
- *The level of gun violence remained high despite the fact that authorities destroyed more than 7,000 firearms seized by law enforcement officers in Palm Beach County during the past five years.*

Palm Beach County's reputation for crime is rising even as many other places are enjoying some of the lowest rates of murder and gun violence in decades.

Last year a national research firm labeled West Palm Beach the 14th-most-dangerous city in the United States — ahead of New York, Los Angeles and Miami, once known as the murder capital of America.

Across Florida, experts attribute a decrease in violent crime partly to state laws that imposed harsher penalties for using firearms during crimes and required violent felons to serve at least 85 percent of their sentences. The decrease came even as the state's population boomed.

Easy availability cited

But parts of Palm Beach County, which have been affected by the same changes, have not experienced the same declines.

"When you factor in the easy availability of handguns to a population that's increasingly violent, it's a major problem," Palm Beach County State Attorney Barry Krischer said. "The challenge for Palm Beach County is reaching out to the at-risk population, getting them to realize that a handgun is not the only solution."

Countywide, deadly gun violence is more widespread than a decade ago. In 2005, at least 173 people were treated for serious gunshot wounds at the county's two trauma centers, at St. Mary's Medical Center in West Palm Beach and Delray Medical Center. That is an increase from the 171 victims treated in 1995.

More people are dying, too. At least 60 were killed by gunfire last year in Palm Beach County, up slightly from the 59 gunned down in 1995, according to the county medical examiner — but far more than the 46 people shot dead last year in Broward County, where the population is 40 percent larger.

The rise in serious gun violence may not seem alarming. But factor in that violent crime dropped dramatically across the rest of the state during the same time period and the contrast is stark.

In Miami-Dade, for instance, the 137 shooting deaths last year were 48 percent fewer than in 1995. Across the state, there were 555 gun-related murders in 2004, 25 percent fewer than in 1994.

West Palm Beach Police Chief Delsa Bush discounted comparisons to other areas and previous years, objecting that killings tend to happen in random clusters.

"There's no rhyme or reason," Bush said. "You can't predict homicides. It goes up and it goes down."

Bush acknowledged, however, that gun violence is entrenched in some of the city's roughest neighborhoods, where the Post analysis shows the number of victims increased from 1994 to 2004.

"The majority of the shooting victims are young black males in a certain age range," Bush said. "They are targeting and fighting each other, and it's a hard thing for us to get a handle on."

Guns are being used in a rising percentage of Palm Beach County homicides. In 1996, firearms were used in 63 percent of the county's killings. By the 2000s, that figure was above 70 percent. What's more, authorities are having a tough time arresting the killers.

West Palm Beach police, for instance, say they have solved just five of the city's 22 homicides last year, although they say they expect to clear others in upcoming months. Officials have attributed their low arrest rate to a reluctance among shooting victims and witnesses to come forward with information.

West Palm Beach Mayor Lois Frankel blamed the shootings that have killed dozens in recent years on the easy availability of guns and an obsession with vigilante justice among young men in the inner city.

Guns, Frankel said, are "too easy to get" in West Palm Beach.

"For every weapon we confiscate, a punk can go get one somewhere else," she said.

Each year, the Palm Beach County Sheriff's Office destroys more than 1,000 guns seized by local law enforcement agencies. Firearms are stolen from cars, businesses, homes.

Many suspects arrested in deadly shootings have felony convictions that bar them from buying a gun legally. Others can't buy a gun because they are younger than 18. But that doesn't mean they can't get one.

"Every young person we've talked to has told us: If they want a gun, they can get one tonight," said Diana Cunningham, executive director of the county's Criminal Justice Commission, which recently published a study on local youth violence.

Shootings are up in the county's most violent areas. So much so that in 2004, two ZIP codes in the West Palm Beach and Riviera Beach areas — 33407 and 33404 — ranked third and fifth in the state for the number of residents treated at Florida hospitals for gun wounds, according to a Post analysis of more than 1,400 gunshot injuries.

Those two ZIP codes occupy Riviera Beach and most of West Palm Beach's north end — neighborhoods long known to be among the most violent in South Florida. The shootings, drugs and poverty are so pervasive there that residents often seem resigned to their neighborhoods' plight.

"That's how the attitude is now," said Connie Hooks, 27, who is raising three children in her grandparents' small house at 50th Street and Pinewood Avenue in West Palm Beach. "It's sad to feel that way and just shrug your shoulders."

She lives at an intersection where a 16-year-old girl, Angel Brooks, was shot dead in 2004 by two teens with assault rifles after an argument over a scooter. Hooks, who drives a shuttle bus at the Sailfish Marina, hears gunshots some nights. Other nights she hears news of friends or acquaintances getting involved in shootings or brawls.

"I worry about myself being in the wrong place at the wrong time," she said.

The stories of victims caught up in the gunfire abound. A teenage Subway clerk shot during a holdup in West Palm Beach. A 16-year-old girl killed after begging for her life. A man shot in the chest answering his front door. A convenience store clerk murdered during a robbery.

All in the past two months. All in Palm Beach County.

The effects of gun violence can be terrible even when everyone survives.

"Sometimes we are even scared to see a movie," said Gerald Philemond, 30, a computer technician whose two sons were hit by stray bullets as he drove them through Boynton Beach one night in March.

His sons, 11 and 2, survived the shooting. But they bear horrible scars, both physical and emotional.

The 11-year-old, who was struck in the leg, is often too frightened to leave the house. The 2-year-old has a long gash on his neck and a giant bullet scar on his right arm, which is still in a brace and which he may never have full use of.

His sons' medical bills so far have totaled more than $400,000, Philemond said.

Hospital Costs Surge

The dead and wounded aren't the only ones affected. The cost of caring for shooting victims has skyrocketed.

One example: St. Mary's Medical Center charged an average of $37,500 to treat gunshot victims in 1994, according to the Post analysis. Ten years later, that figure had jumped to $52,800.

All told, Palm Beach County hospitals billed more than $8 million for gunshot victims' medical care in 2004.

The impact doesn't come just in dollars and cents.

At trauma centers, doctors and nurses know all bets are off when a shooting victim arrives. Resources are diverted immediately to prepare the operating room, to ready the victim for emergency surgery.

The emergency room staff can have a patient prepped for surgery in five minutes. But it takes a team of several doctors and nurses, even a respiratory therapist.

"There's a cost to all of this," said Dr. Ivan Puente, director of trauma services at Delray Medical Center. Sometimes the cost is in medical supplies, or blood supplies. Sometimes it hits the other patients square-on.

Often, Puente explained, doctors and nurses must leave less-critical patients when a badly injured shooting victim arrives. For those not on the verge of death, the emergency room becomes a waiting room.

"They will have to wait until we're done with this patient," Puente said.

Palm Beach County taxpayers are shouldering much of the financial cost. The county's health care district, financed by local tax dollars, pays to cover the emergency room bills for uninsured victims of traumatic injuries, including many gunshot victims.

The health care district paid $18.5 million in 1995 to cover costs of treating uninsured county residents in the emergency rooms at St. Mary's and Delray Medical Center. This year, it expects to pay $36.5 million, or roughly $29 for each county resident.

Fears about crime are helping to fuel a dramatic increase in the number of county residents buying licenses to carry guns. Nearly 25,000 county residents owned concealed weapons permits last year, up 72 percent from 10 years ago. During the same period, the county's population grew just 31 percent.

Most firearm owners obtain their guns legally and rarely, if ever, use them outside of a shooting range or hunting trip. But the chasm between law-abiding gun owners and armed criminals is far from seamless.

Firearms disappear from homes, cars and gun stores. They end up at pawn shops, or in the hands of underground dealers—or get passed around until someone tucks one into his pants and robs a bank, carjacks a vehicle or mows down an enemy.

In 2003, a street gang stole a Colt AR-15 assault rifle from the Pahokee police chief's patrol car and used it to rob banks throughout the county. A year later, thieves hit up the Gator Gun and Archery Center west of West Palm Beach, making off with more than 50 firearms. Ten months after that, thieves struck again, taking 68 more guns from the store.

"Every illegal gun was once legal," said Zach Ragbourn, a spokesman for the Brady Campaign To Prevent Gun Violence.

Young black men at center

Politicians, community groups and law enforcement officers have debated for years how to address gun violence, and have created numerous youth intervention programs.

The Criminal Justice Commission says young black men are statistically most likely to be both the perpetrators and the victims of gun violence in Palm Beach County. They are also the fastest-growing demographic in Palm Beach County, according to a commission study.

"That's the age group that ends up being the victims and the perpetrators of these murders," said Cunningham, the commission's executive director.

Criminal justice advocates have recommended that the county and local city governments create youth centers in neighborhoods where some of the most at-risk youths live.

But no one believes gun violence is going away anytime soon in Palm Beach County. And the costs, in many ways, keep coming.

Even at the funerals.

Last year alone, Palm Beach County spent more than $6,900 to bury or cremate at least six shooting victims — the ones whose families were too poor to pay themselves.

After reading this article, Ultra Electronics Forensic Technology would generate a letter to the principals identified in the news piece in order to create awareness of IBIS and NIBIN. In addition, as part of the company's social responsibility initiative, Ultra Electronics Forensic Technology would include an offer in each letter to deliver *The 13 Critical Tasks Workshop* at no cost to the city and the Police Department. In keeping with this initiative, the following letter was sent to West Palm Beach Mayor Lois Frankel.

September 7th, 2006

Mayor Lois J. Frankel
200 2nd Street
West Palm Beach, Florida 33401

Dear Ms. Frankel,

I have recently read an article that appeared in the Palm Beach Post entitled "Gunned down in Palm Beach County: Many wounded by bullets share two local ZIP Codes". This article mentions your implication in recent endeavors aimed at halting gun-related violence.

I appreciate the fact that you are adamant about finding innovative ways to address the issue of firearms-related violence, and I applaud your ongoing efforts to quell gun violence in your city. As a result, I feel compelled to write to you today because I have some information to provide you with at the end of this letter that may be of value to you.

I obtained some of this information during my 24 year career with the Bureau of Alcohol, Tobacco, and Firearms which ended upon my retirement as the Special Agent in Charge of the New York Division in 1999. Additionally, some of the information was drawn from my seven years of experience as the Vice President of a company called Forensic Technology Inc.; the makers of IBIS - the Integrated Ballistics Identification System.

*I thought you would be interested to know that there are tools available like the Integrated Ballistics Identification System (**IBIS®**) to help police solve more gang and shooting crimes but it takes people and efficient processes to make them work. IBIS technology can find the "needle in the haystack", suggesting possible matches between pairs of spent bullets and cartridge cases at speeds well beyond human capacity in order to help forensic experts give detectives more timely information about crimes, guns, and suspects.*

To help extend this capability across police jurisdictions, the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) administers the National Integrated Ballistic Information Network (NIBIN) connecting IBIS systems in over 225 labs across the country. NIBIN helps police solve shooting crimes and has proved effective in investigations involving gang related violence.

NIBIN depends on the right mix of people, processes, and technology applied together at the state and local level. In turn, the state and local NIBIN partners rely on the federal government for programmatic and technological support.

Therefore, NIBIN needs support from all of its key stakeholders: including investigators and forensic experts, police chiefs and prosecutors, public administrators, law makers and the public as well to be most effective.

Violent crime is on the rise – the FBI reports that murders are up almost 5 percent. Some city leaders and crime experts are blaming increased gang violence and the criminal misuse of firearms.

Every shooting scene and crime gun has a story to tell. A big part of the story lies in the unique markings imprinted on fired ammunition components found at crime scenes. This data must be fully exploited in order to best link crimes, guns and suspects. ***IBIS*** *technology can certainly be an effective tool but it takes dedicated stakeholders applying their efforts through well integrated processes to make the technology most effective.*

As the developer of ***IBIS****, we at Ultra Electronics Forensic Technology have compiled a workbook detailing critical tasks and best practices that have been field proven by* ***IBIS*** *users in 39 countries around the world. The publication entitled the "13 Critical Tasks: Creating an Efficient and Effective Integrated Ballistics Information Network" is available to Police, Crime Labs, Prosecutors and Public Safety Administrators for the asking. It can be a very useful reference in building any violent crime reduction strategy. A PDF copy can be requested at https://www.ultra-forensictechnology.com/en/services/publications/. You can learn more about Ultra Electronics Forensic Technology at www.ultra-forensictechnology.com.*

Yours truly,

Pete Gagliardi,
VP Corporate and Marketing Communications

Within a week or so, the letter to Mayor Frankel had made its way into the West Palm Beach Police Department, through the Chief's Office, and onto the desk of the Commander of the Criminal Investigations Division, Captain Laurie Van Deusen.

Captain Van Deusen wasted no time in contacting Ultra Electronics Forensic Technology. Her email is shown below.

Dear Mr. Gagliardi,

I had been forwarded the letter written to Mayor Frankel by you, regarding the benefits of NIBIN and IBIS as we work to reduce violent crime. Reference is made within your letter to Mayor Frankel to an article which was published in our local newspaper, The Palm Beach Post, titled "Gunned down in Palm Beach County: Many wounded by bullets share two local ZIP Codes". We do appreciate your interest in this article and your interest in providing to our City information regarding NIBIN and IBIS. We wholeheartedly agree with everything you have stated as to the benefits of both NIBIN and IBIS in our endeavors to quell violent crime.

The purpose of my response is to let you know that throughout our investigations referenced in the newspaper article, we have in fact, very successfully, utilized NIBIN and IBIS which has enabled our investigators to link a multitude of crimes and offenders. Our agency, taking the lead role in this crime spree, would not be close to linking or solving many of these cases referred to in the article, if it were not for the utilization of NIBIN and IBIS and of course, the cooperation of our local ATF agents and personnel from the Palm Beach County Sheriff's Office Firearms Lab, as well as other local, state and federal law enforcement officers and agents.

My division's investigators have spent an enormous amount of hours on these investigations, with court proceedings coming up in the not too distant future.

Per your offer in the letter, Mr. Gagliardi, I am requesting a copy of the publication entitled the "13 Critical Tasks: Creating an Efficient and Effective Integrated Ballistics Information Network". Certainly continual and advanced training provided to our officers is paramount and we hopefully will glean additional information from this publication which will prove beneficial to all future investigations.

Lastly, I would like to learn more about training opportunities which are available regarding IBIS, as our agency has been applauded and recognized for its initiatives with firearms related practices - to include having one of our sergeant trained in the first phase of IBIS. The training afforded to this sergeant was key to the progress made in these referenced investigations. I'll be able to explain further when I speak with one of you. My contact information is below.

Sincerely,

Captain Laurie J. Van Deusen
West Palm Beach Police Department
Commander, Criminal Investigations Division
600 Banyan Blvd.
West Palm Beach, FL 33401

The Workshop

The email from Captain Van Deusen initiated a series of discussions between Van Deusen and Ultra Electronics Forensic Technology staff which lead to the delivery of *The 13 Critical Tasks Workshop* over a two day period at the start of November 2006.

Thirty people from local, county, and federal law enforcement agencies operating within the county and from the State Attorney's Office attended the workshop. Their varied work responsibilities, such as investigations, crime scene processing, evidence management, forensics, and prosecutors, offered several diverse perspectives on the matters raised in the workshop.

At first, some members of the working group seemed a bit skeptical of discussing "the good, the bad, and the ugly" about their crime fighting efforts openly in a group. As the first day of the workshop progressed, they saw that the best practices which they had proudly put into place very much mirrored many of *The 13 Critical Tasks* that were presented. They began to see value in the fact that they now had independent validation to convince superiors that they were on the right track. You could see and hear the interaction and candid discussions about what was and was not working in Palm Beach County.

By the time the workshop ended, the group was surprised and pleased that they were able to openly get to the heart of the issues that affected them and they were able to identify the people, process, and technology improvements that they believed were needed for an effective county-wide gun crimes protocol. The group did not want their work to go unnoticed. The consensus was that the CJC should hear firsthand about the concerns and recommendations raised in the workshop because the CJC is responsible for developing initiatives and coordinating funding for reducing gun violence in the county.

Ultra Electronics Forensic Technology presented the workshop findings to the CJC on November 3, 2006. The points outlined below were well received by the council.

Participants' Concerns Generated from *The 13 Critical Tasks Workshop* to Design a More Efficient and Effective Firearms Crime Solving Network in the County

PEOPLE:

- Additional Firearm Examiner resource(s) are badly needed at the County Lab for confirmation of NIBIN Hits & general case work.
- NIBIN Data Input Resource(s) are badly needed to support the County Police Departments and to reduce the data input burden on the County Lab Firearm Examiners and to speed NIBIN evidence and test-fire correlations for investigative follow-up.
- Every PD should have a designated person or Property and Evidence Custodian to ensure adherence to a County Crime Gun Processing Protocol.
    - Consider deputizing in order to share resources.
- The Youth Violence Law Enforcement subgroup should be impaneled for the long term.
    - Act as strategic & tactical steering committee.
    - Hold regular information sharing meetings.
    - Conduct routine reviews of what's working and what is not.

PROCESSES:

- Develop a County wide protocol for crime gun processing that mirror's the WPBPD Protocol (including NIBIN & Tracing, DNA, and Fingerprints) and review the MOU that will manage and enforce it.
    - Recommend that the lab be involved to provide some training on technical forensic issues.
    - Place high priority on processing recovery on stolen vehicles.
- Form a multi-agency working group to review the County Lab intake processes in order to identify any training needed for evidence submission, identify bottlenecks, and provide SOP training to affected users.
    - Consider people staffing for a Walk in Wednesday type firearms unit approach.
- Consider developing new SOPs for providing roving NIBIN Data Input resource(s) for the entry of test-fires into NIBIN.
    - Provide training for the new data input resources.

- Find new and better ways to eliminate the County Lab backlogs in order to be more proactive in generating ballistics matches and investigative leads and to reduce the reliance on hunches for directing ballistics comparisons.
- Meet the need of the County Lab to provide timely investigative information by keeping current with all correlation reviews and confirmation of NIBIN Hits.
- Recommend the test-firing of all police weapons for later NIBIN entry if the weapon is ever stolen.
- Recommend the voluntary documentation of the description of privately owned firearms to be preserved in a safe place by the owner for later reference if the gun is subsequently stolen.
    - Consider providing an envelope in which the owner could store a fired cartridge case from his or her gun.

TECHNOLOGY

- Take stock of current technology capabilities.
- Identify technology that is needed to help sustain the new processes to be put in place, and to make the people involved most efficient and effective.
    - Consider acquiring remote NIBIN Data entry systems called BRASSTRAX for use by large Police Departments (e.g., WPBPD) and the roving data input resource so that increased NIBIN data input does not interfere with NIBIN Analysis activities at the County Lab.
    - Consider a remote data analysis station Match Point Plus for the County lab in order to free up the NIBIN system there for more data input.
    - Consider using Uniform County wide DNA swabbing kits.
    - Consider County wide crime gun and ballistics evidence tracking & mapping software.
    - Consider test-firing stations at County Police Departments - Ballistic Buddies.

CONCLUSION

- The goal must be to maintain a proper balance of people, processes, and technology.

Following *The 13 Critical Tasks Workshop* and the presentation of workshop concerns and recommendations to the stakeholders (CJC, LEPC, and the Palm Beach County law enforcement agencies including ATF), began the development of a gun crime protocol which was intended to serve as a recommended policy for the handling of firearms evidence among law enforcement agencies operating within Palm Beach County. It was based on the recognition that criminals are mobile and that property, including found property, held by one police agency may be the key piece of evidence sought by another. The new policy recommendations would build upon what the working group had implemented in West Palm Beach and what had been identified in *The 13 Critical Tasks Workshop*. The CJC, presented with a comprehensive and well integrated crime fighting strategy, supported the expanded undertaking with critical funding in the amount of two million dollars for people, technology and interagency coordination.

The Process

All of this work resulted in the development of the **Palm Beach County Gun Crimes Protocol Policy Recommendations** which cover the collection of ballistic evidence, the DNA swabbing and test-firing of all seized firearms, the interface with NIBIN and the ATF National Crime Gun Tracing Center, and more. On February 11, 2010, the LEPC approved the gun crime protocols shown below as the recommended policy for Palm Beach County law enforcement agencies to follow.

Palm Beach County Gun Crime Protocols Policy Recommendations

Commonly known as the Palm Beach County "Firearms Protocol"

Purpose

Firearm-related crime often crosses multiple jurisdictional areas and, therefore, the mutual sharing of certain types of firearm crime information is important to achieve a coordinated approach to solving these crimes. A comprehensive approach to combating firearm-related crime involves identifying, investigating and arresting armed violent criminals as well as those persons who illegally supply firearms to the criminal element.

The comprehensive and *timely submission* of all recovered "known and suspected crime guns," and firearm-related evidence to the Palm Beach County Sheriff's Office Crime Laboratory for entry into the NIBIN program (National Integrated Ballistic Identification Network.) through the IBIS computer, or by the entry of a casing, by agencies participating in BRASSTRAX, through BRASSTRAX, will assist in linking and solving shooting-related crimes and generating additional investigative leads. Nothing will take the place of a thorough and well documented investigation. The more timely entries are made into NIBIN or BRASSTRAX, by all participating agencies, increases the likelihood of crime linkage to obtain our ultimate goal to solve crimes.

The complete processing and documentation of all recovered guns, both "known crime guns" and "suspected crime guns" (more commonly referred to as 'found guns'), and all firearm-related evidence, in conjunction with thorough documentation of case facts and statements made by possessors, associates of possessors, witnesses, and arrestees, produces stronger cases, *often resulting in multi-jurisdictional crime linkage.* "Crime plus forensic, equals detection plus conviction." Thorough documentation, processing and forensic analysis is more likely to support a successful prosecution or result in a substantial plea agreement, hence, reducing law enforcement officers' time spent in state or federal court.

As such, the following techniques and procedures are outlined and are intended to be guidelines in the implementation of a multi-jurisdictional and comprehensive approach to combating firearm-related crimes. These guidelines are not intended to replace, supersede or otherwise preclude the application of the Florida Rules of Criminal Procedure and/or Florida Rules of Evidence in any court hearing. They do however supersede previous recommendations and agreements by agencies regarding this policy.

Policy Recommendations:

General:

- It is recommended that agencies adopt a policy consistent with these recommendations, and protocols to be utilized when investigating firearm-related crimes and incidents.
- It is recommended for all agency issued firearms, issued to personnel, be test-fired with two casings maintained by the agency, for NIBIN entry or Firearms Laboratory comparison, if the firearm is stolen from a law enforcement officer, or fired in an officer involved shooting incident.
- A "known crime gun" or "suspected crime gun" is any firearm illegally possessed, used in a crime, or suspected by law enforcement to have been used in a crime. This may include a firearm found abandoned gun, regardless of circumstances, if the recovering law enforcement agency has reason to believe the firearm may have been used in a crime or illegally possessed.

Definitions:

- A "spent casing" is what is ejected from a semi-automatic firearm, or what remains in the cylinder of a revolver after a gun has been fired.
- A "shot shell" is a spent or unspent cartridge fired from a shotgun.
- A "jacket" is the covering of a bullet, which may or may not be separated from a casing once the gun is fired.
- A "projectile" is the portion of the bullet, covered by the jacket, which may separate from the casing once the gun is fired.
- A "fragment" is a portion of the jacket or projectile which may be recovered when a projectile does not remain intact.
- All known crime guns, suspected crime guns, and other firearms related evidence and items, whenever possible, should be photographed at the crime scene, or location recovered if not a crime scene, prior to being moved, collected, or processed, as photographs may help to develop an investigation, support probable cause, and strengthen the prosecution of those charged with firearms related crimes.

- All recovered "known crime guns" and "suspected crime guns", and all other firearms related evidence should be collected, documented and considered for forensic examination by the Palm Beach County Crime Laboratory and entry into the National Integrated Ballistic Identification Network (NIBIN), or for BRASSTRAX entry by trained and qualified members of the law enforcement agencies who participate in the BRASSTRAX Program. The circumstances of each case will determine if the gun and other firearms related evidence or items will initially need to be examined and worked by the Palm Beach County Firearms Laboratory, or if the gun and other ballistics related evidence will remain with the respective law enforcement agency until called for.
- NIBIN entry through the IBIS terminal will be completed by members of the Palm Beach County Firearms Laboratory.
- BRASSTRAX entries will be for cases involving the recovery of guns only, or cases in which a single casing was recovered, unless otherwise authorized by the Palm Beach County Sheriff's Office Firearms Laboratory manager or designee. BRASSTRAX entries will only be made by trained and qualified members of law enforcement agencies. The Palm Beach County Firearms Laboratory manager, on questionable cases, will have the final authority as to the entry point of a test-fired casing or casing(s) recovered at a crime scene or location. When questions exist the Palm Beach County Sheriff's Office Firearms Laboratory Manager should be contacted to discuss circumstances and firearms related evidence and items submitted.
- All guns coming into the possession of any law enforcement agency should be traced through the U.S Department of Justice, Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) National Tracing Center to assist in Identifying illegal sources of crime guns. This may be accomplished by submitting an ATF Form 3312.1 (National Tracing Center Trace Request Form) via mail or fax to the ATF NTC at the toll free fax number listed at the top of the form, or through the internet based tracing system, eTrace.
- The tracing of all firearms and review of trace results may develop investigative leads, as guns impounded by law enforcement agencies may be unreported stolen guns or guns which are reported stolen to law enforcement but a serial number of the gun was not available by the victim or owner to provide to law enforcement, or the trace results may link individuals with no criminal history who is supplying guns to those with criminal records. Appropriate follow-up investigations of successful traces may too help crime victim in recovering their stolen property and help to solve crimes.

- To perfect a strong prosecutable case and for developing Crime Gun Intelligence, officers at the scene of a crime, or when seizing a firearm for legitimate law enforcement purposes, should ask a series of basic questions of the suspect(s), possessor, or associates of the possessor(s) and/or witnesses to establish gun possession. Obtaining statements from everyone contemporaneous with the incident involving the gun, helps limit or prevent the potential for false alibis at a later time in an investigation, as to ownership, possession, and the source of the firearm.
- Known crime guns and suspected crime guns, when "clear" through NCIC/FCIC should be entered into NCIC/FCIC as "Recovered Guns," as this will prevent another agency throughout the United States from entering this same gun as "Stolen", when an agency already has the gun in their possession. Guns are sometimes recovered during crimes or incidents, prior to a victim or owner realizing a gun has been stolen, or before a serial number is provided to law enforcement for enter stolen into NCIC/FCIC. (See NCIC/FCIC Criteria detailing the specifics of "Recovered Gun" entries.
- Establish processes to ensure all guns entered as stolen, lost or recovered into NCIC/FCIC are accurately entered, which is part of the validation processes mandated through NCIC/FCIC Terminal Agency User Agreements, as inaccurately entered gun information will negate or minimize the opportunity for recovering a stolen or lost gun.
- A copy of teletype entries or clearances for stolen, lost, recovered, or stolen recovered guns, should be included as documents within the original offense, as these serve as excellent references and are important to case investigations.
- Processes should be in place at each agency and within the Palm Beach County to verify the accuracy of gun information entered into NCIC/FCIC. When and if discrepancies are realized, modifications should be made immediately, with copies of the modifications again verified to ensure accurate records. The modified entry, actual teletype copy, should be included in the original report.

Procedures for Processing Known Crime Guns, Suspected Crime Guns, and all other Firearms Related Evidence or Property Evidence:

- Clean latex gloves should be worn when handling any gun or firearm-related evidence to prevent cross contamination. Only when exigent circumstances exist should a gun or any firearm-related evidence handled without gloves. Exigent circumstances as to why gloves were not worn should be documented in police reports.
- Depending on the case facts and situation, known crime guns, suspected crime guns, and any firearms related evidence or items will be processed for latents and DNA in a manner set forth by the respective law enforcement agencies policies, which are consistent with obtaining the best forensic evidence results. Processing for latents and DNA may be accomplished by agencies Crime Scene personnel, or other properly trained personnel within the agency impounding the gun or other firearms related evidence or items, or by submitting the known or suspected crime gun(s) and other firearms related items or items to the Palm Beach County Firearms Laboratory for processing. Known case facts will determine the need to process or not process for latents or DNA. Exceptions for not processing should be documented in incident reports.
- The recovering department will be responsible for the collection and submission of all DNA suspect/elimination standards to the PBSO Crime Laboratory, when necessary and upon the approval of the Palm Beach County Sheriff's Office DNA Coordinator. All requests for DNA analysis requests must be initiated by telephoning the Palm Beach County Sheriff's Office DNA Evidence Coordinator in advance of any submissions.
- Known crime guns and suspected crime guns should be submitted to the Palm Beach County Sheriff's Office Firearms Laboratory for NIBIN entry, if the agency is not participating in the BRASSTRAX Program[62]. Law enforcement officers and agency personnel should not "test-fire" any gun in the field, solely for the purpose of determining if the gun is functional; all test-firing and function testing will be performed by personnel trained in the handling of firearms, in a controlled setting, such as a firearms range, with all safety practices and protection gear utilized. The "test-firing" of all known and suspected crime guns may be performed by any recovering department participating in the BRASSTRAX program, where that capability exists, or the firearm may be submitted to the PBSO Crime Laboratory for test-firing and NIBIN entry when multiple casings exist at a crime scene or location, or when called for by Firearms Laboratory personnel.

62 BRASSTRAX refers to the West Palm Beach Program of remote NIBIN data entry which uses IBIS technology.

- When submitting any gun, "known crime gun" or "suspected crime gun," or firearms related evidence to the Palm Beach County Sheriff's Office Crime Laboratory, the recovering department should complete a Palm Beach County Crime Laboratory Property Receipt for all guns submitted to the Palm Beach County Crime Laboratory. The Palm Beach County Firearms Laboratory Property Receipt should include, when known by the submitting agency, all pertinent descriptive information on each gun submitted; i.e., make/manufacturer, country of origin and importer, model, serial number, caliber, type (pistol, revolver, rifle, shotgun, derringer), finish/color, unique markings or modifications (scope, owner applied numbers), Cyrillic or other unique markings. Information relative to the possessor and associates of possessor (name, alias, DOB, race, sex, identification numbers (driver's license, ID card, etc.), recovery date (crucial), recovery location (be specific), whether the gun is clear NCIC/FCIC or if the gun is a recovered stolen firearm. If a gun is known to be a 'recovered stolen firearm,' a copy of the NCIC/FCIC Teletype HIT should be attached to the submitting agencies Property Receipt and to the Palm Beach County Firearms Crime Laboratory Property Receipt, or document information as to the entering agency and the entering agencies case number on the Palm Beach County Crime Laboratory Property Receipt, as this information is important for eTrace and further investigation should there be a NIBIN HIT.
- If the recovering agency has submitted a trace of the gun to the ATF Tracing Center, the assigned eTrace number or other method used to trace the gun should be documented on the Palm Beach County Crime Laboratory Property Receipt, as this prevents duplication of effort.
- The Palm Beach County Sheriff's Office Crime Laboratory Property Receipt must indicate the type of processing and analysis requested for each gun and other items; i.e., latents, fingerprints, photographing, test-firing, and/or just entry into NIBIN. Note if the submitting agency has already processed the gun for latents and swabbed for DNA and NIBIN entry only is required, or other requested Crime Laboratory examination.
- Requests for all firearm-related work, to include comparisons related to other cases, should be noted specifically on the Palm Beach County Sheriff's Office, Crime Laboratory Property Receipt, to include the name of agency and the respective agency's case number, along with Crime Laboratory case numbers when known. **Requests for firearm-related comparison cases will require a call and/or email to the Firearms Laboratory Manager in advance of submissions, to discuss case facts and items impounded which may need to be compared, as it is best for all firearms related evidence to be examined and compared at the same time, rather than separately whenever possible.**

- Maintaining control and care over all known crime guns and suspected crime guns, as well as all other firearms related evidence is crucial, as loss of any such items may lead to the suppression of the Firearm Examiners expert testimony which may link the firearm-related evidence to the defendant(s) or to other cases dependent upon forensic examinations of firearms or firearms related evidence.
- All guns submitted, regardless of circumstances, should be checked in NCIC/FCIC for information regarding its status as being entered as lost or stolen. The status "Clear NCIC/FCIC" or "HIT", with the entering agencies name and case number noted, should be noted for every gun submitted.
- A copy of the teletype confirmation of an NCIC/FCIC "HIT" record should be included within the original case file, working case file, and a copy attached to the Property Receipt on which the gun is documented upon submission to the respective agencies Property and Evidence Section.
- When a gun is brought to the Palm Beach County Sheriff's Office Crime Laboratory, note on the Palm Beach County Crime Laboratory Property Receipt if the gun is a "stolen recovered gun" or not, the name of the entering agency resulting in the "HIT" and the entering agencies case number. This serves multiple purposes. NOTE: Pertinent information is contained within each entry which may be needed for future reference and may be valuable to an investigation. Once the stolen firearm record is cleared (removed) from NCIC/FCIC, the record will no longer be available, without an arduous off-line search.

Procedures for processing all crime gun related arrests:

- Advise the defendant of his or her Miranda Rights when required.
- The arresting officer should ensure the defendant is fingerprinted if arrested. This will assist in defendant identification at a later date. Whenever possible, if no arrest is made relative to a gun or casing being impounded, a thumb print should be obtained on a notice to appear form, or field interview card/report, if circumstances dictate that a subject will not be transported to a booking facility. Adherence to this process will be of value if a gun is linked to other incidents through NIBIN, latents, or DNA, and when there may be a question as to the true identity of the person encountered and released in the field.
- Request for the defendant to provide a DNA standard. Refusal to cooperate or voluntarily submit a DNA standard should be noted in the report and probable cause affidavit (arrest report.)
- Attempt to obtain a written or taped statement from the defendant, possessor, or associates of possessor, regarding the defendant's or possessor's possession of the firearm; i.e., how the firearm was obtained, when, where and from whom the firearm was obtained. Ask if the

defendant or possessor has any prior felony conviction(s). Document all statements by the defendant, whether formal or spontaneous, relating to the firearm and/or criminal record in the police report. **Document all refusals by the defendant to provide information relating to the firearm(s)**. Gun trace results may identify an original retail purchaser. The gun may be an unreported stolen or lost gun or a reported stolen or lost gun when the serial number was not available to the victim/owner to provide to law enforcement when initially reporting.

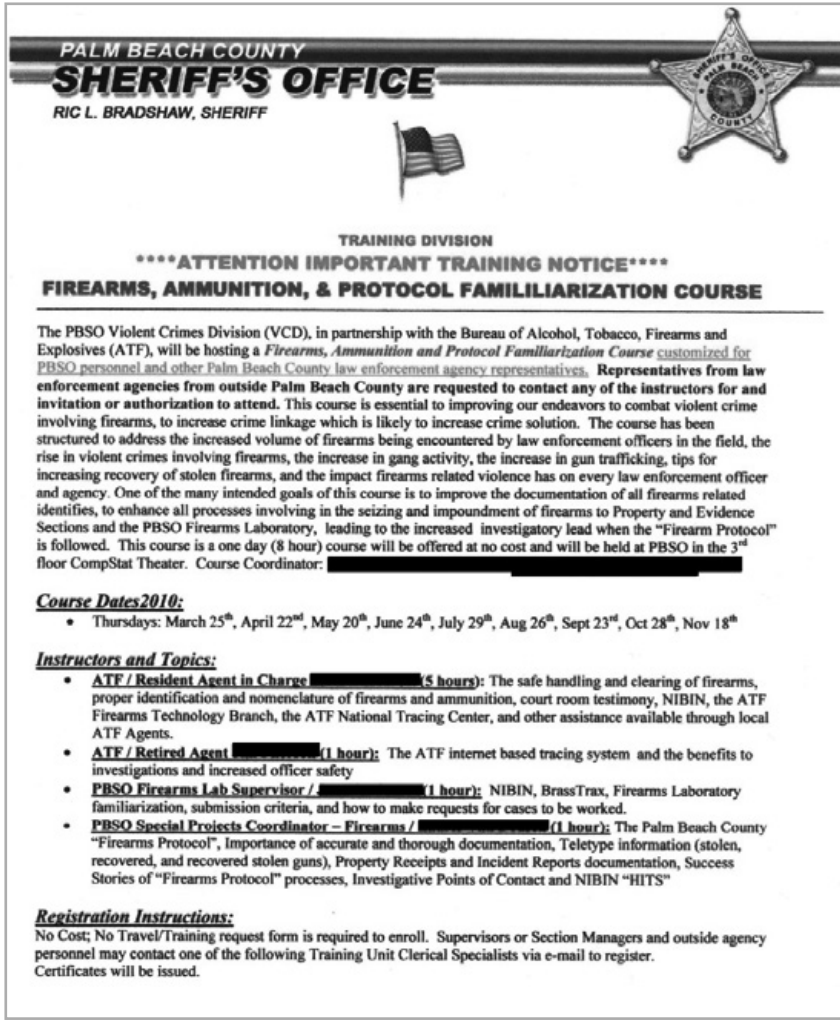
- Attempt to obtain statements from any witnesses, associates, and accomplices; (i.e., other passengers in a car stop) of the defendant regarding the facts and circumstances of the offense. This assists in establishing the defendant's or possessor's firearm possession, by precluding false alibis by accomplices or associates, claiming ownership of the firearm post arrest.
- Prepare a detailed narrative report as to the circumstances leading to the arrest, or seizing of the firearm, including a complete description of the firearm, make/manufacturer, country of origin, importer, model, serial number, caliber, type of gun, status in NCIC/FCIC (stolen or not. Include complete vehicle information, witness/accomplice information, and a listing all officers present at the arrest. If the arrest began with or involved a 9-1-1 call(s), obtain and preserve a copy of the 9-1-1 call(s) and CAD report(s). If the arrest involved a video-taped traffic stop, obtain and preserve a copy of the recorded encounter. If the arrest involves a foot pursuit, fight or struggle which was audio recorded by the communications center, request and preserve a copy of the tape.
- Obtain a criminal history printout for the defendant and ascertain the number and types of prior felony convictions and ascertain the first date of conviction for a felony. It is important to determine the exact date of the first felony conviction, as this date could be an important factor when charging a Convicted Felon with possession of a firearm, particularly if the defendant's DNA is on a gun, and the gun was reported stolen after the exact date of the first felony conviction. Having this information will help in solidify a prosecution for this charge.
- Use the criminal history information, coupled with the defendant's actions for which you made the arrest, to determine which law violations apply and which venue (Federal or State) provides for the maximum possible sentence.

- Casings entered into NIBIN are automatically correlated to other casings and test-fired casings from guns impounded and entered NIBIN, via IBIS or BRASSTRAX, throughout our NIBIN Region. If the defendant or possessor is from outside our NIBIN Region, which includes Miami Dade, Broward, Palm Beach and Indian River Counties, all of which have firearms laboratories, request through the Palm Beach County Sheriff's Office Firearms Laboratory Manager, (email, telephone call, or document on Property Receipt), for the test-fired casing from a known or suspected crime gun to be "manually correlated" in other NIBIN Regions where the subject may have lived or traveled through, or investigative information suggests the gun was fired during the commission of a crime outside our NIBIN Region. By doing this on a case by case basis, will increase the likelihood of inter-jurisdictional crime linkage. This must be requested; it is not done automatically. The areas or regions of correlation can be expanded at any time after entry into NIBIN, but justification must exist. As an example, if an associate or a possessor, or confidential information says, "possessor shot the gun during the commission of any type of crime in Tucson, Arizona," you may request for the test-fired casing to be correlated in those NIBIN Regions between South Florida and Tucson, Arizona (essentially the I-10 east to west corridor.) The Firearms Laboratory Firearm Examiners will handle this aspect.

In order to ensure that law enforcement agencies are aware of the gun crime protocol policy recommendations and that they are understood and followed correctly, a training course was developed by the Palm Beach County Sheriff's Office and ATF which covers several important areas:

- Firearm and ammunition identification, firearm nomenclature, and the ATF eTrace process
- The firearm examination capabilities of the Palm Beach County Sheriff's Crime Lab
- The details of the protocol policy recommendations
- A hands-on practical exercise with various types of firearms

A copy of the training syllabus is shown below.



PALM BEACH COUNTY
SHERIFF'S OFFICE
RIC L. BRADSHAW, SHERIFF

TRAINING DIVISION

******ATTENTION IMPORTANT TRAINING NOTICE******

FIREARMS, AMMUNITION, & PROTOCOL FAMILILIARIZATION COURSE

The PBSO Violent Crimes Division (VCD), in partnership with the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), will be hosting a ***Firearms, Ammunition and Protocol Familiarization Course*** customized for PBSO personnel and other Palm Beach County law enforcement agency representatives. **Representatives from law enforcement agencies from outside Palm Beach County are requested to contact any of the instructors for and invitation or authorization to attend.** This course is essential to improving our endeavors to combat violent crime involving firearms, to increase crime linkage which is likely to increase crime solution. The course has been structured to address the increased volume of firearms being encountered by law enforcement officers in the field, the rise in violent crimes involving firearms, the increase in gang activity, the increase in gun trafficking, tips for increasing recovery of stolen firearms, and the impact firearms related violence has on every law enforcement officer and agency. One of the many intended goals of this course is to improve the documentation of all firearms related identifies, to enhance all processes involving in the seizing and impoundment of firearms to Property and Evidence Sections and the PBSO Firearms Laboratory, leading to the increased investigatory lead when the "Firearm Protocol" is followed. This course is a one day (8 hour) course will be offered at no cost and will be held at PBSO in the 3rd floor CompStat Theater. Course Coordinator: [redacted]

Course Dates2010:

- Thursdays: March 25th, April 22nd, May 20th, June 24th, July 29th, Aug 26th, Sept 23rd, Oct 28th, Nov 18th

Instructors and Topics:

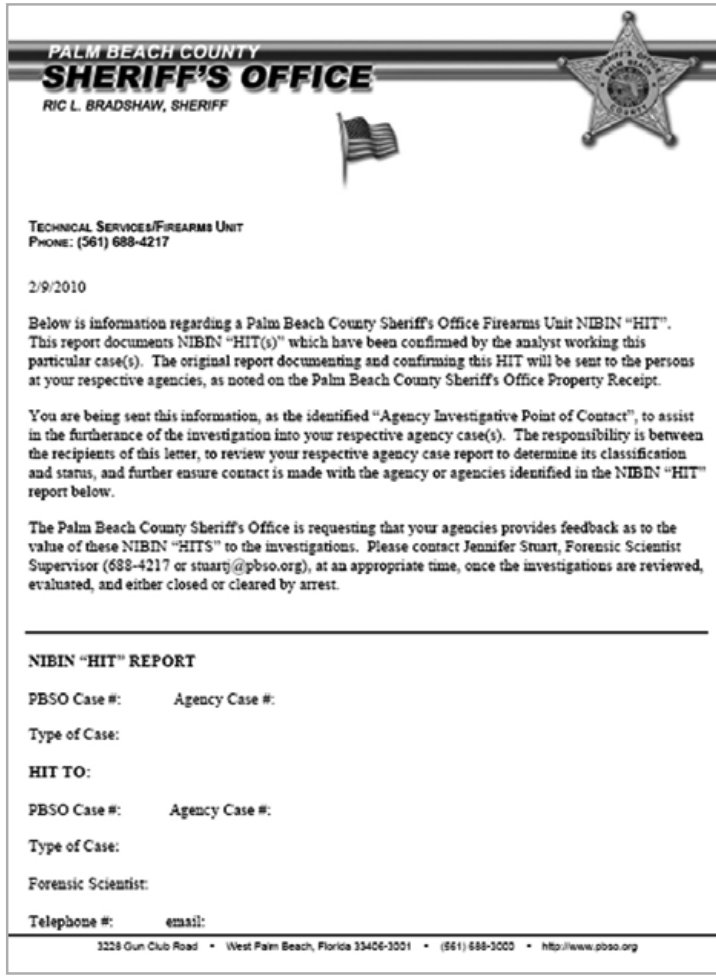
- **ATF / Resident Agent in Charge [redacted] (5 hours):** The safe handling and clearing of firearms, proper identification and nomenclature of firearms and ammunition, court room testimony, NIBIN, the ATF Firearms Technology Branch, the ATF National Tracing Center, and other assistance available through local ATF Agents.
- **ATF / Retired Agent [redacted] (1 hour):** The ATF internet based tracing system and the benefits to investigations and increased officer safety
- **PBSO Firearms Lab Supervisor / [redacted] (1 hour):** NIBIN, BrassTrax, Firearms Laboratory familiarization, submission criteria, and how to make requests for cases to be worked.
- **PBSO Special Projects Coordinator – Firearms / [redacted] (1 hour):** The Palm Beach County "Firearms Protocol", Importance of accurate and thorough documentation, Teletype information (stolen, recovered, and recovered stolen guns), Property Receipts and Incident Reports documentation, Success Stories of "Firearms Protocol" processes, Investigative Points of Contact and NIBIN "HITS"

Registration Instructions:

No Cost; No Travel/Training request form is required to enroll. Supervisors or Section Managers and outside agency personnel may contact one of the following Training Unit Clerical Specialists via e-mail to register.
Certificates will be issued.

Tools were also developed to allow for better communication of the protocols and the sharing of operational information such as: (A) the NIBIN hit letter, (B) ATF Publication 3312.12 *ATF POLICE OFFICER'S GUIDE to Recovered Firearms*, (C) Police Notice to Victims of Auto Theft, and (D) ATF Publication 3312.8 *Personal Firearms Record*. Examples of these tools are provided below:

The NIBIN Hit letter: This letter communicates the fact that a NIBIN "hit" has been confirmed to the designated "Agency Investigative Point of Contact" whose job it is to track all NIBIN Hits for their respective agencies. It identifies the case information needed to follow-up on the hits. It also denotes responsibilities, requests follow-up and feedback, and provides contact coordinates.



PALM BEACH COUNTY
SHERIFF'S OFFICE
RIC L. BRADSHAW, SHERIFF

TECHNICAL SERVICES/FIREARMS UNIT
PHONE: (561) 688-4217

2/9/2010

Below is information regarding a Palm Beach County Sheriff's Office Firearms Unit NIBIN "HIT". This report documents NIBIN "HIT(s)" which have been confirmed by the analyst working this particular case(s). The original report documenting and confirming this HIT will be sent to the persons at your respective agencies, as noted on the Palm Beach County Sheriff's Office Property Receipt.

You are being sent this information, as the identified "Agency Investigative Point of Contact", to assist in the furtherance of the investigation into your respective agency case(s). The responsibility is between the recipients of this letter, to review your respective agency case report to determine its classification and status, and further ensure contact is made with the agency or agencies identified in the NIBIN "HIT" report below.

The Palm Beach County Sheriff's Office is requesting that your agencies provides feedback as to the value of these NIBIN "HITS" to the investigations. Please contact Jennifer Stuart, Forensic Scientist Supervisor (688-4217 or stuartj@pbso.org), at an appropriate time, once the investigations are reviewed, evaluated, and either closed or cleared by arrest.

NIBIN "HIT" REPORT

PBSO Case #: Agency Case #:

Type of Case:

HIT TO:

PBSO Case #: Agency Case #:

Type of Case:

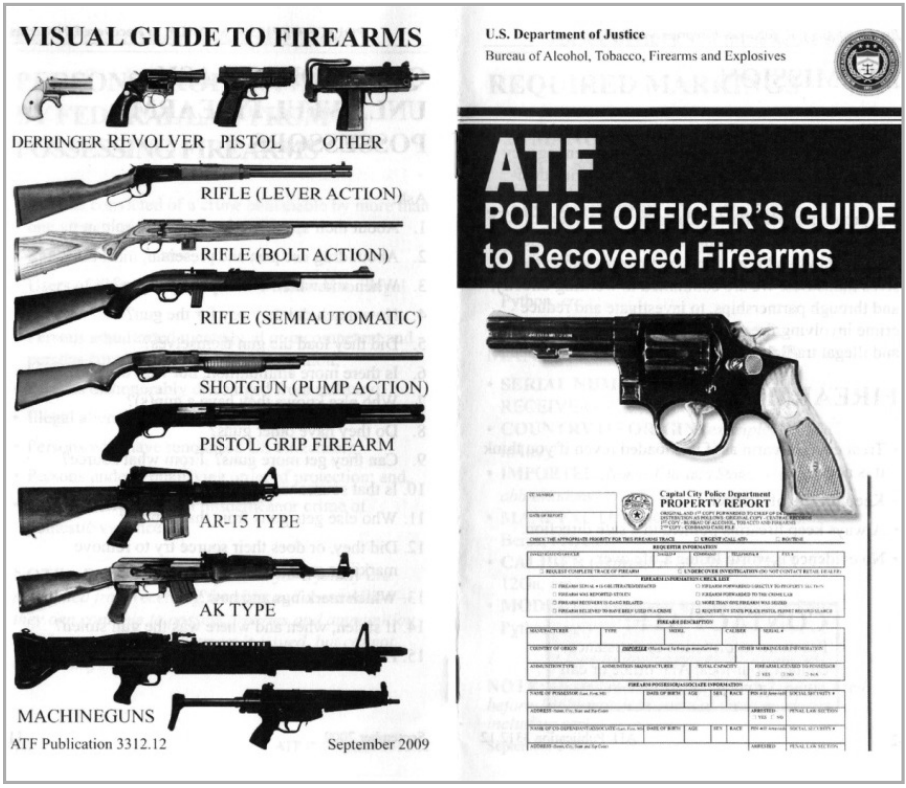
Forensic Scientist:

Telephone #: email:

3228 Gun Club Road • West Palm Beach, Florida 33406-3001 • (561) 688-3000 • http://www.pbso.org

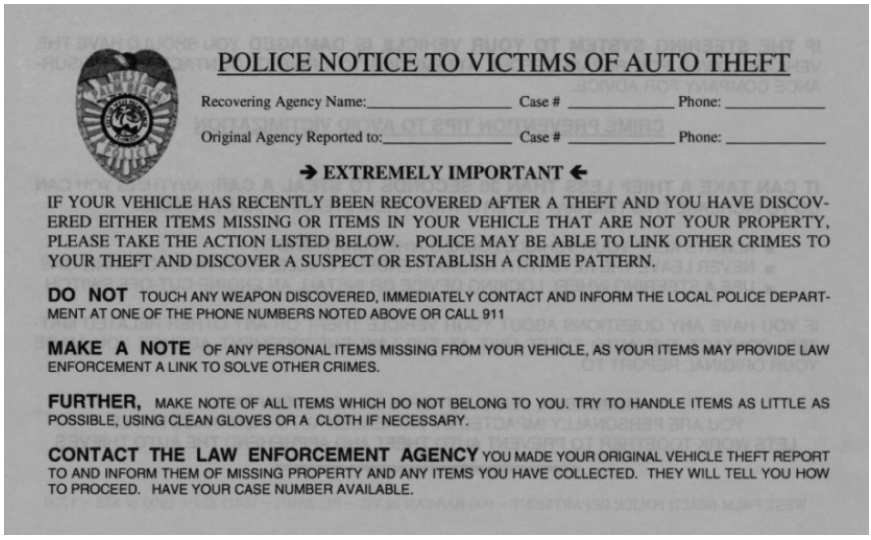
ATF Publication 3312.12 ATF Police Officer's Guide to Recovered Firearms

This publication serves as a ready pocket reference and pictorial on how to identify and describe certain types of firearms for crime gun tracing purposes. It also contains useful firearm-related information, such as tips for running database queries on the firearms, the types of people prohibited by law from possessing firearms, and questions to ask persons arrested for firearms possession.



Police Notice to Victims of Auto Theft

This card was developed in response to the common criminal modus operandi (MO) in Palm Beach County which entailed the use of stolen cars as the transportation used in the commission of firearm-related crimes and drive-by shootings. The card is left in stolen vehicles that have been recovered and returned to the rightful owners. The card advises the owners on what to do and not do if certain items are missing from or found in the vehicles.



POLICE NOTICE TO VICTIMS OF AUTO THEFT

Recovering Agency Name:_____ Case # _____ Phone: _____

Original Agency Reported to:_____ Case # _____ Phone: _____

→ EXTREMELY IMPORTANT ←

IF YOUR VEHICLE HAS RECENTLY BEEN RECOVERED AFTER A THEFT AND YOU HAVE DISCOVERED EITHER ITEMS MISSING OR ITEMS IN YOUR VEHICLE THAT ARE NOT YOUR PROPERTY, PLEASE TAKE THE ACTION LISTED BELOW. POLICE MAY BE ABLE TO LINK OTHER CRIMES TO YOUR THEFT AND DISCOVER A SUSPECT OR ESTABLISH A CRIME PATTERN.

DO NOT TOUCH ANY WEAPON DISCOVERED, IMMEDIATELY CONTACT AND INFORM THE LOCAL POLICE DEPARTMENT AT ONE OF THE PHONE NUMBERS NOTED ABOVE OR CALL 911

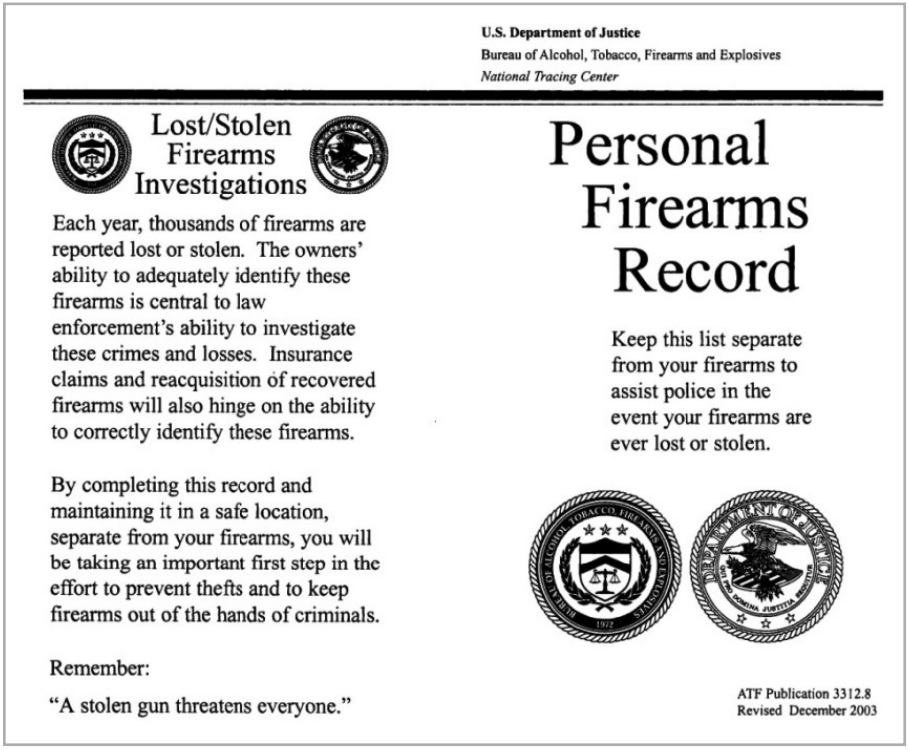
MAKE A NOTE OF ANY PERSONAL ITEMS MISSING FROM YOUR VEHICLE, AS YOUR ITEMS MAY PROVIDE LAW ENFORCEMENT A LINK TO SOLVE OTHER CRIMES.

FURTHER, MAKE NOTE OF ALL ITEMS WHICH DO NOT BELONG TO YOU. TRY TO HANDLE ITEMS AS LITTLE AS POSSIBLE, USING CLEAN GLOVES OR A CLOTH IF NECESSARY.

CONTACT THE LAW ENFORCEMENT AGENCY YOU MADE YOUR ORIGINAL VEHICLE THEFT REPORT TO AND INFORM THEM OF MISSING PROPERTY AND ANY ITEMS YOU HAVE COLLECTED. THEY WILL TELL YOU HOW TO PROCEED. HAVE YOUR CASE NUMBER AVAILABLE.

ATF Publication 3312.8 Personal Firearms Record

This record is provided to firearm owners so that they can record complete and proper descriptions of their firearms. In the event that their firearms are ever stolen, they would have an accurate record to refer to when describing the stolen firearms for police reporting and the issuance of stolen property lookouts.



U.S. Department of Justice
Bureau of Alcohol, Tobacco, Firearms and Explosives
National Tracing Center

Lost/Stolen Firearms Investigations

Each year, thousands of firearms are reported lost or stolen. The owners' ability to adequately identify these firearms is central to law enforcement's ability to investigate these crimes and losses. Insurance claims and reacquisition of recovered firearms will also hinge on the ability to correctly identify these firearms.

By completing this record and maintaining it in a safe location, separate from your firearms, you will be taking an important first step in the effort to prevent thefts and to keep firearms out of the hands of criminals.

Remember:

"A stolen gun threatens everyone."

Personal Firearms Record

Keep this list separate from your firearms to assist police in the event your firearms are ever lost or stolen.

ATF Publication 3312.8
Revised December 2003

Case Examples

In effect, in West Palm Beach and several surrounding towns for over two years now, the gun crimes protocols are delivering multiple benefits for the stakeholders involved. Multiple NIBIN Hits have been generated, linking shooting events and firearms to crimes not only crossing multiple police jurisdictions within the county but between counties as well. Here are but a few examples.

Riviera Beach

Police in the city of Riviera Beach responded to a report of a shooting into an occupied vehicle and conducted a crime-scene search. Recovered 9mm cartridge case evidence was submitted to the crime lab and processed through the NIBIN database, as per the protocol. In April 2007, a young man was arrested by the Palm Beach Sheriff's Office (PBSO) for unlawful possession of a Smith & Wesson, 9mm pistol. As per the protocol, the firearm was swabbed for the presence of DNA and submitted to the crime lab for test-firing and entry into the NIBIN database. The PBSO notified Riviera Beach Police that the NIBIN search had linked the 9mm pistol that they had seized to the January shooting of the occupied vehicle. Armed with this information, Riviera Beach Police pursued the investigation of the shooting and learned that DNA recovered from the grip and trigger area of the Smith & Wesson pistol belonged to the young man arrested by the PBSO. Police had enough information to link the suspect found in unlawful possession of the firearm in Palm Beach to the shooting into the occupied vehicle in Riviera Beach. As per the protocol, all of this information was shared among the affected stakeholders who agreed that the suspect, an active shooter, could be removed from the community for a much longer period of time if he were to be prosecuted federally as a career criminal, where he would face enhanced mandatory sentencing—the case was turned over to ATF.

This case serves to support the leveraging value of the regular review of all recent shooting data and the various types of information (e.g., intelligence, forensic, etc.) known about them.

Club Goers

A victim was murdered in a shooting incident at a local bar in West Palm Beach. Few leads were developed and the case was well on its way to going "cold". One fired cartridge case was recovered, entered into IBIS, and searched against the NIBIN database. About two months later in Miami, two women walking dogs in different locations were robbed at gun point. A description of the vehicle involved was broadcast to police agencies in the county. Police officers on patrol spotted the suspect vehicle and gave chase. The suspects fired gunshots at the pursuing officers. Police arrested the suspects. The gun was never found but the

fired cartridge cases were recovered, entered into IBIS, and searched against the NIBIN database. NIBIN helped forensic experts determine that the gun that was used by the arrested robbery suspects to shoot at police was the same gun that was used in the murder at the Latin bar. This case exemplifies the fact that a collaborative group of stakeholders, executing an institutionalized process leveraged with forensic technology, can be very effective at responding to cross-jurisdictional gun violence.

The Evidence of One

Police in North Palm Beach recovered a gun during a routine arrest. The firearm was test-fired and the test-fired cartridge cases were entered into IBIS and searched against the NIBIN database. NIBIN helped forensic experts link the firearm to an armed robbery being investigated by the Palm Beach County Sheriff's Office, to a murder in the City of Boynton Beach, and to several shots-fired incidents which had occurred in the cities of Royal Palm Beach and West Palm Beach.

Miami Arrests

The Palm Beach County Sheriff's Office had been investigating a murder with no promising leads. A piece of evidence from that investigation, a fired cartridge case, was entered into IBIS and searched against the NIBIN database. An officer-involved shooting in Miami two months later resulted in two arrests and the seizure of a gun. The gun was test-fired and the test-fires were entered into IBIS and searched against the NIBIN database. NIBIN helped forensic experts to link the gun to the murder evidence from Palm Beach County giving the Sheriff's Office new and promising leads to follow on the two subjects arrested in Miami.

Crime Spree Over

A stolen gun was recovered by the Palm Beach Sheriff's Office. It was test-fired and the test-fires were entered into IBIS and searched against the NIBIN database. NIBIN helped forensic experts link the stolen gun to a shooting in the city of Royal Palm Beach in which the victim was paralyzed. A suspect was arrested and the gun and the offender were subsequently linked to a carjacking and four armed robberies in the cities of Boynton Beach, Delray Beach, and Boca Raton, plus multiple shootings in the city of West Palm Beach.

Lake Park

A murder occurred in Lake Park, FL, and cartridge case evidence was entered into IBIS and searched against the NIBIN database. Later, a gun was recovered by police and test-fired. The test-fires were entered into IBIS and searched against the NIBIN database. NIBIN helped forensic experts link the gun to Lake Park murder. An ATF gun-trace helped police identify the original purchaser of the gun who had reported it stolen. The gun's owner gave the police a list of people who had been at his home around the time the gun was discovered missing. Police were able to place one of the people on the list at the scene of the Lake Park murder. A confession was obtained from that suspect and a second murder investigation was closed in the process.

The preceding success stories validate the fact that armed criminals are mobile and evidence of their gun crimes are often scattered across multiple jurisdictions. An item of property which appears to hold no particular significance to the police agency finding it can be the case-breaker for a neighboring agency. These success stories are credible proof that a sustainable gun crime processing protocol can prevent important evidence from 'falling between the cracks" and stop criminals from going undetected.

Technology

One of the recommendations arising from *The 13 Critical Tasks Workshop* held in West Palm Beach and supported by the Palm Beach County LEPC was the purchase of an additional BRASSTRAX system so that the West Palm Beach Police could enter their cartridge case evidence and test-fire exhibits directly into the NIBIN database in a timely and much more efficient manner.

The addition of the BRASSTRAX technology was intended to help sustain the new Palm Beach County Gun Crimes Protocols by providing two key benefits to the entire process:

- The technology would allow the West Palm Beach Police Department to perform their own data entry, thus speeding up the process of contributing evidence and test-fires to the lab and resulting in investigative lead-producing hits. Armed criminals could be identified more quickly and denied additional opportunities to do more harm.
- Historically, the West Palm Beach Police Department had submitted large quantities of firearm-related evidence to the county lab and was responsible for a significant percentage of the labs' workload. By using their own IBIS system to enter their cartridge case evidence and test-fire exhibits directly into NIBIN, the West Palm Beach Police would remove a significant workload from the shoulders of the personnel at the county lab. The lab could then redirect available time to other priorities, such as the performance of NIBIN data entry for the other Palm Beach County Protocol partners who did not have access to IBIS and NIBIN, and focus on the confirmation of prospective hits from data entered into NIBIN by the West Palm Beach Police.

The success of this tactic was quickly acknowledged. **Captain Pat Maney, who at the time of this writing was the Commander of the Criminal Investigations Division—West Palm Beach Police Department, stated that:** *"Prior to the installation of BRASSTRAX at our Department, all shell casing entries had to be made at the local Sheriff's office. This process not only limited our ability to make entries, but created significant lag time between evidence recovery and entry into the NIBIN system. With the installation of BRASSTRAX we now have the ability to enter casings within hours of recovery or immediately after test-firing. The end result; we have tripled the number of casing hits resulting in investigative leads over the same time frame in 2007! BRASSTRAX is an integral part of linking violent, firearm-related crime in Palm Beach County."*

In the course of gathering data for this case study, the author of this book spoke at length with senior investigative and forensic personnel about the use of BRASSTRAX by police to send ballistic data to the forensic lab where it

would be reviewed in a more timely and efficient manner. The investigative and forensic managers were very clear that this tactic has clearly benefited all of the stakeholders involved and that they had no problems or concerns about the methodologies employed. They all stated that the technology was easy to use and automatically produced images of consistently high quality. Both the investigative and forensic managers felt that they have been given a tool and a process to help accelerate their work and make them more productive and effective at the same time. The mangers said that they can now have critical evidence electronically submitted to the lab and being worked on in a matter of a few in hours, as opposed to the weeks, months, and sometimes years it used to take prior to the new processes that have been made possible through the integration of the new technology. ***They stated that if they were to ever lose this capability it would be a step backwards in their crime fighting efforts.***

A news article from the *South Florida Sun-Sentinel* is presented below to address two essential points of this case study: (1) it identifies the reasoning and value proposition behind the West Palm Beach Police Department's decision to acquire a BRASSTRAX system to perform data entry directly into the NIBIN database, and (2) it summarizes the two double homicide investigations introduced earlier in this case study which served as the initial impetus for the creation of the Palm Beach County Gun Crimes Protocol Policy Recommendations.

"BRASSTRAX Helps Police in Palm Beach County Match Guns to Killers"

By Jerome Burdi | South Florida Sun-Sentinel
May 16, 2008

West Palm Beach – The .40-caliber Glock handgun stolen from a sheriff's deputy claimed the lives of four men in three days and left a trail of evidence in its bullet cartridges, discarded at the murder scenes.

It was a bloody November 2004 in the city.

Two double homicides on Palm Beach Lakes Boulevard, labeled revenge killings by police, prompted outcry and community leaders organized rallies. Police told the public the attacks were planned, not random. The only clue detectives had was that the killer used the same gun in the four slayings.

Detectives solved the case by connecting all the bullets using the National Integrated Ballistic Identification Network, or NIBIN. The database analyzed the distinct markings on each of the bullets — linking them to one gun and one killer.

The case was so successful that West Palm Beach police recently bought BRASSTRAX, a camera system that allows officers to capture images of those markings.

"The gun has the fingerprint, it has its own unique microscopic detail," said Palm Beach County Sheriff's Office senior forensic scientist Omar Felix. "That fingerprint is impressed into the cartridge case or on the bullet when it's shot out of the barrel."

When police retrieve bullet cartridges from a crime scene, they analyze and enter details of the markings into NIBIN, the national database. The database will repeatedly search to see if that gun has been used in other crimes.

When officers retrieve a gun, they shoot a bullet into a metal tube called a "bullet catcher." The officer then removes the bullet cartridge and records the markings the gun made in BRASSTRAX. That image is then input into the national database.

West Palm Beach police started using the BRASSTRAX system — paid for with $100,000 from the county's Criminal Justice Commission — in March. The purchase makes West Palm Beach police the second police agency in the county that can enter bullet cartridge images into the national network.

The Sheriff's Office has used the NIBIN network since 2001 and all the police agencies in the county used to take their bullet evidence there. West Palm Beach's newer technology will help reduce the Sheriff's Office workload and cut the sometimes months-long wait to make entries, officials said.

Riviera, Delray and Boynton Beach police departments are also authorized to input their information into the database using the West Palm Beach Police Department's BRASSTRAX.

The West Palm Beach Police Department also enters information from officers' guns into the system in case one is stolen and used, like the deputy's gun that was used in the November 2004 double homicides.

Detectives said those cases — where four men were slain in a hail of bullets from the handgun and two other firearms — are a good example of how tracing a gun or bullets can lead investigators to a killer.

"We had no witnesses, we had nothing except expended shell casings and projectiles from the victims," said West Palm Beach police Detective Donald Iman.

Investigators began comparing those bullets and were able to link them to one gun — the Glock. The bullet evidence was the key to linking Derek Dixon to the slayings.

"It's evidence if we can prove that gun was in one person's hands," Iman said.

Police arrested Dixon as a suspect in a carjacking case nearly two months after the killings. He was charged with the murders based on the testimony of a co-defendant and a recorded conversation from the county jail where he admitted to the murders, according to police reports. In March, Dixon, 22, pleaded guilty to the four counts of second degree murder and is now serving 40 years in federal prison for the killings, which will run at the same time as the 40 years he's already serving for carjacking and possession of a firearm by a convicted felon.

Iman documented how the gun evidence and the national network helped map out Dixon's rampage:

To get the sheriff's deputy's gun from the thief who stole it, Dixon traded some stolen jewelry in a street deal in July 2004.

Using the ballistics database to match the bullets fired at each of the scenes, police traced Dixon's attacks between August and December 2004.

He was later identified from surveillance camera images of a Steak 'n Shake restaurant shooting in August. No one was injured but bullet cartridges were left behind.

On Sept. 25, Dixon fired the handgun after a fight at a nightclub on Okeechobee Boulevard but again no one was injured, police said. Victims refused to cooperate but police found more bullet cartridges.

The first double homicide occurred on Nov. 4 when Dixon thought the victims, Reynold Barnes, 23, and Eddie Lee Gibbs, 26, were the people he was firing at in the Steak 'n Shake incident. After leaving an IHop Restaurant, Dixon fired the Glock handgun and another shooter fired a .380 Beretta, police said.

Gibbs and Barnes were hit at least 10 times and died.

Three days later on Nov. 7, Dixon saw Larry Turner, 23, who he thought tried to kill his brother. He followed a car with three people in it and opened fire in a drive-by shooting. Turner was injured but Ali Jean and Turner Norwood, both 22, were killed and bullet cartridges from the handgun were left behind.

At a carjacking Dec. 3 outside an Arby's restaurant in Palm Beach Gardens, shots were fired and a Glock handgun was dropped at the scene.

It was the one that police were looking for.

Crosswalk Analysis

The following chart demonstrates the high degree of consistency that exists between the Palm Beach County Gun Crime Protocol Policy Recommendations and *The 13 Critical Tasks*. It serves as a "crosswalk", allowing the reader to shift back and forth between the protocols and the 13 tasks to compare points of similarity.

The 13 Critical Tasks	Palm Beach County Gun Crimes Protocol Policy
Task 1—Managing Stakeholders	
Develop at least one senior level champion who has the clout required to drive the initiative to bring all the right people into the process.	Several champions developed: The mayor, the West Palm Beach Police Chief, Captains Van Deusen and Maney, the Palm Beach County Sheriff, ATF, the Palm Beach Law Enforcement Planning Council (LEPC), and the County Criminal Justice Commission (CJC).
Identify and assign participants for the strategic (policy) and tactical (operational) stakeholder groups.	The policy maintains ongoing stakeholder groups (policy and operational), uses agency-designated investigative points of contact and the tactical and strategic oversight value of the Special Projects Coordinator—Firearms (assigned to the Violent Crimes Division of the Palm Beach County Sheriff's Office). The Coordinator—Firearms position was specifically created to help the PBC Sheriff's office implement the protocol throughout the county.
Conduct a facilitated presumptive approach awareness session for the strategic stakeholder working group to generate a broader consortium of champions.	Accomplished by the Ultra Electronics Forensic Technology letter to the mayor and telephone communications with Captain Van Deusen.
Conduct a facilitated presumptive approach protocol development workshop for the tactical stakeholder working group and transmit recommendations to the senior strategic (policy) group.	Conducted *The 13 Critical Task Workshop* held at West Palm Beach, which focused on taking the presumptive approach, and transmitted results to the Palm Beach Law Enforcement Planning Council.

The 13 Critical Tasks	Palm Beach County Gun Crimes Protocol Policy
Task 1—Managing Stakeholders (Cont.)	
Plan, develop, and implement a sustainable regional program to generate timely crime solving and crime prevention benefits by taking the presumptive approach when investigating crimes involving the misuse of firearms.	The written policy recommendations are being implemented.
Be prepared to reach out and communicate the new program protocols and expectations to all affected stakeholders.	The policy uses a number of communications: Outreach, protocol implementation training, and special tools.
Establish an ongoing process of performance monitoring between the two working groups to ensure that the initiative is well coordinated and is achieving the intended objectives.	The policy reviews and measures performance. The Florida State University Criminology and Policy Research Center also includes the initiative in regular evaluations.

The 13 Critical Tasks	Palm Beach County Gun Crimes Protocol Policy
Task 2—Integrating Programs	
Integrate information from the relevant crime programs (such as gangs, crime gun tracing, geo-crime mapping, and gunshot acoustics detectors) including forensic data, such as ballistics, DNA, and fingerprints.	The policy integrates with the Youth Violence Prevention Project of the Palm Beach County Criminal Justice Commission integrating innovative solutions relative to the courts, crime prevention, corrections, and law enforcement. In addition, it integrates other solutions, such as ATF eTrace, forensics, such as DNA and fingerprints, and other programs, such as **National Crime Information Center (NCIC)** and stolen vehicles.
Leverage inputs, outputs, and outcomes of relevant crime programs.	The policy leverages NIBIN and eTrace outputs and other forensic data, such as DNA and fingerprints, with NCIC stolen firearm and vehicle data, police video and audio intelligence, witness accounts, and ATF's Project Lead Gun Trafficking Analysis Program and Armed Career Criminal Program.
Effectively process program output data for both tactical and strategic uses.	The various data outputs are leveraged with other data to improve the case at hand. This is evident in initiatives such as the "ATF armed career criminal enhancement sentencing" for unlawful gun possessors and strategically as well with programs such as ATF Project Lead Gun Trafficking Analysis Program which tracks patterns and trends to identify illegal gun trafficking schemes.
Eliminate silos and stovepipes	The policy recommendations are models of intra- and inter-agency collaboration with information crisscrossing both internal and external lines.

The 13 Critical Tasks	Palm Beach County Gun Crimes Protocol Policy
Task 3—Establishing a Formal Understanding and Reinforcing Directives	
Thorough documentation of the program and directives—from high level vision and strategy to ground level tactical execution and day-to-day operations.	The written policy recommendations are being implemented.
The issuance of the policy directives from the appropriate level of authority (agency, administrative, legislative).	The West Palm Beach Chief Law Enforcement Officer implemented the initial West Palm Beach Gun Crimes Protocols.
Formal Memorandums of Understanding to allow for participation in joint operations between various independent stakeholder organizations.	Formal Memorandums of Understanding signed by the Chief Law Enforcement Officer implementing the Palm Beach County Gun Crimes Protocol Policy Recommendations.
An internal review mechanism with senior managers held accountable for their subordinates' adherence to the directives.	An academic criminology and public policy center tracks performance and progress as well as the Law Enforcement Planning Council and the County Criminal Justice Commission.

The 13 Critical Tasks	Palm Beach County Gun Crimes Protocol Policy
Task 4—Collecting Firearm and Related Evidence	
Collaborate with affected stakeholders to identify a sustainable and timely process for following the presumptive approach in the collection of information from inside and outside a crime gun by balancing people, processes, and technology.	The Law Enforcement Planning Council, the County Criminal Justice Commission and *The 13 Critical Tasks Workshop* held at West Palm Beach generated consensus among the affected stakeholders for the timely processing of gun crimes and evidence including: Crime Gun Tracing, NIBIN test-firing and data entry, DNA, fingerprints, and processing arrests for gun crimes.
At a bare minimum, there should be a protocol to: (1) test-fire all guns taken into police custody that are of certain specified types and calibers that data indicates are the most likely to be used in crime, (2) enter all test-fired exhibits and all recovered ballistic evidence of corresponding calibers through an automated ballistics system like IBIS and network like NIBIN, and (3) trace all guns taken into police custody though an electronic information management system like ATF eTrace or IBIS Firecycle.	The policy recommendations far exceed the minimum standards recommended in this book.
The protocol for data collection should be thoroughly documented and integrated into the standard operating procedures within agencies and through a formal MOU across agencies operating within the same affected crime area.	The policy recommendations do this to an outstanding degree of detail and breadth of scope within West Palm Beach PD and across all of the county partner agencies as well.

The 13 Critical Tasks	Palm Beach County Gun Crimes Protocol Policy
Task 5—Transferring Evidence	
Map the property taken into custody for processing and identify any gaps and time and distance obstacles that impede the timely exploitation of information from crime guns and related evidence while following the presumptive approach.	*The 13 Critical Tasks Workshop* held at West Palm Beach covered this action plus it is an ongoing effort managed by the Special Projects Coordinator—Firearms at the Palm beach County Sheriff's Office.
Balance people, processes, and technology to design a timely, efficient, and sustainable solution for managing the gaps so as to get evidence from the point of custody to the applicable forensic and analysis units.	*The 13 Critical Tasks Workshop* held at West Palm Beach covered this action. The working group developed proposed unique solutions to manage the gaps (refer to *The Participant's Concerns Generated from the Workshop to Design a More Efficient and Effective Firearms Crime Solving Network in the County*).
Document the new process and implement it as standard policy.	The policy recommendations do this within West Palm Beach PD and across the county partner agencies.

The 13 Critical Tasks	Palm Beach County Gun Crimes Protocol Policy
Task 6—Assessing and Evaluating Evidence	
Create an early opportunity for the forensic specialist and the investigator to collaborate and exchange timely and relevant information in order to fine tune and help optimize the remainder of the processes.	This is handled willingly by the investigators and the firearm examiners.
Establish the required decision matrix against which case-by-case facts and circumstances should be compared to determine the protocols or next steps to be followed (e.g., additional forensic analysis, scope of correlation, selection of test-fire ammunition, and crime gun tracing).	The policy recommendations are very specific.

The 13 Critical Tasks	Palm Beach County Gun Crimes Protocol Policy
Task 7—Test-Firing	
Establish firearm safety and anti-contamination protocols for test-firing purposes.	The Palm Beach Test-Fire Protocols address safety and cross-contamination.
Establish ammunition selection protocols for test-firing purposes.	The Palm Beach Test-Fire Protocols address ammunition selection.
Ensure that a timely and sustainable process is in place for test-firing guns (e.g., for entry into IBIS) that have been seized by police, including those that have no readily apparent connection to a murder or other serious crime.	The Palm Beach County Gun Crimes Protocol Policy Recommendations do this within West Palm Beach PD and across the county partner agencies.

The 13 Critical Tasks	Palm Beach County Gun Crimes Protocol Policy
Task 8—Acquiring Images of Fired Ammunition Components	
Training: Proper IBIS training and proficiency is a critical component. The worst possible scenario for the user and the technology provider is to not realize success with IBIS because of improper operation.	All IBIS operators in Palm Beach County have attended and followed the required IBIS/NIBIN training.
Quality Assurance: A quality assurance protocol should be implemented for monitoring the input of both image data and case related data as well.	This is done for image quality.
Continued Adherence to Protocols: IBIS protocols taught during IBIS training are designed to maximize the advantages of the system; therefore, they should be followed. For example, the system allows the capturing of three different types of marks from the surface of fired cartridge cases. All three should be captured in order to optimize the correlation process.	Undergoing review.

The 13 Critical Tasks	Palm Beach County Gun Crimes Protocol Policy
Task 9—Reviewing Correlation Results	
Training: Acquiring the necessary skills to interpret the IBIS correlation scores and utilize the MATCHPOINT analysis tools.	All IBIS operators in Palm Beach County have attended and followed the required IBIS/NIBIN training.
The comprehensive evaluation of the all of the output data, such as the correlation scores for breech face impressions, firing pin impressions and ejector marks, and other case data as well.	Currently reviewing the issue of ejector marks.
An enforced protocol to ensure that the correlation result review is conducted for every exhibit reported and is completed in a timely manner which meets the needs of the investigative and prosecutorial stakeholders.	All correlation reviews are kept up-to-date.

The 13 Critical Tasks	Palm Beach County Gun Crimes Protocol Policy
Task 10—Confirming Hits	
Trained and qualified firearm examiners who can confirm matches and establish hits.	Firearm examiners in Palm Beach County are trained and qualified in their field and as IBIS operators in Palm Beach County they have attended required IBIS/NIBIN training.
Retrieval of the physical evidence from its storage location in a timely manner in accordance with chain of custody protocols and established laboratory intake processes.	The policy covers this issue.
Reporting of the results of examinations.	The timeliness of reporting is something that the Palm Beach County Protocols have addressed with methods like the NIBIN hit letter and coordination by the Special Projects Coordinator—Firearms.

The 13 Critical Tasks	Palm Beach County Gun Crimes Protocol Policy
Task 11—Communicating Hit Information	
Collaborate with affected stakeholders on the development and implementation of efficient processes to generate information to link crimes, guns, and suspects, and communicate it to investigators in a timely manner.	NIBIN Hit letter and Special Projects Coordinator—Firearms
Create awareness of the process, its value, and the expectations of the stakeholders.	Training by the key Law Enforcement Policy Council and coordinated by the Special Projects Coordinator—Firearms and the Firearms Unit Manager at the Palm Beach County Sheriff's Office and ATF.
Require the investigative follow-up of hits.	The NIBIN Hit letter.
Report on investigative action and hit value.	The NIBIN Hit letter.
Track hits and report them to stakeholders.	Training to all stakeholder partners and presentations at the Law Enforcement Planning Council.

The 13 Critical Tasks	Palm Beach County Gun Crimes Protocol Policy
Task 12—Leveraging Tactics and Strategies	
Hold regular meetings to share all information developed from inside and outside the gun when the presumptive approach is employed by the operational stakeholder partners.	Monthly North and South County Intelligence Meetings and daily oversight by the Special Projects Coordinator—Firearms.
Leverage output information such as hits, crime gun trace data, fingerprints, DNA, gun crime locations, and types of ammunition used.	Being done as part of the policy recommendations.
Collaborate routinely with stakeholder partners to improve tactics and strategies and to develop new ones to maximize outcome value.	The Law Enforcement Planning Council, the County Criminal Justice Commission and the Special Projects Coordinator—Firearms are tasked with this.

The 13 Critical Tasks	Palm Beach County Gun Crimes Protocol Policy
Task 13—Improving Programs	
Conduct day-to-day operationally-oriented program improvement through tactical stakeholder collaboration.	The Special Projects Coordinator—Firearms is tasked with this.
Use performance measures and stakeholder feedback to drive improvements.	The Florida State University Criminology and Policy Research Center, the Law Enforcement Planning Council and the Special Projects Coordinator-Firearms are all involved in tracking and measuring these metrics.
Periodically bring the operationally oriented stakeholders and the strategically oriented stakeholders together for complete program reviews to validate the value of the program outcomes and identify what is and is not working.	The Special Projects Coordinator—Firearms, the Law Enforcement Policy Council and the County Criminal Justice Commission are tasked with this.

Conclusion

Regional Crime Gun Protocols are set of predefined and consistent actions taken by police and forensic personnel that are designed to generate maximum actionable intelligence from firearms and ballistic evidence encountered during criminal investigations conducted within those geographical areas in which armed criminals are most likely to be crossing multiple police jurisdictions.

The protocols will produce different benefits for each of the various stakeholder groups served.

For example they can:

- Help crime labs increase productivity and effectiveness.
- Help police and prosecutors solve more crimes and remove more, violent criminals from society.
- Help public administrators and policy makers maintain confidence that sustainable solutions are in place to deal with violent crime.
- Help make a region a safer place for the people who live there.

As demonstrated by this case study, Regional Crime Gun Protocols can be sustained and institutionalized so as to generate substantial benefits for all of the stakeholders through the balancing of people, processes, and technology across all of *The 13 Critical Tasks*.

Where the Rubber Meets the Road: A Case Study in Proving IBIN's Crime-Solving Value

Three years ago, when INTERPOL first established its ballistics data sharing program called IBIN (INTERPOL Ballistic Information Network) the reaction was mixed.

Forensic "expert" opinions spanned the whole spectrum from "it won't ever work" all the way to "it will be a game changer!". It makes you wonder if all of them fully understood what they were actually commenting on.

There were others though, like Fernando Dias, supervisor of the IBIS Unit at the Police Scientific Laboratory, Polícia Judiciária of Portugal, and José Francisco Dominguez, his counterpart in Spain, who went to work. They rolled up their sleeves, signed on to INTERPOL's IBIN Program and began sharing ballistics data electronically over the boundary line that separates their countries.

Dias and Dominquez were determined to learn for themselves whether or not this new INTERPOL offering called IBIN could be of crime solving value to them, their agencies and to the public they serve. They wanted a "road test"—to try it out for themselves.

Here is how the events unfolded…

Police Link Crime, Guns, and Suspects Across National Borders

In early 2004, a crime spree began in the Braga region of northern Portugal. What began with car thefts and property damage, the severity escalated over the next few months to armed robberies, carjackings, attempted murder, and murder.

Investigators suspected that a mobile, organized crime group was involved in many crimes that were taking place in the region, but they had no way of being certain. Detectives from Portugal's *Polícia Judiciária* began canvassing small towns and villages across the area, asking local police departments if they knew of recent firearm crimes. Some did, but thinking that the events were random and isolated, local police had not done much with the seemingly "insignificant" cartridge case evidence. Although collected at crime scenes, the evidence was never entered into IBIS. As the investigation progressed from Braga to Freamunde, investigators gathered dozens of cartridge cases as evidence.

Upon their return to Lisbon, the investigators used IBIS at the *Laboratorio de Policía Científica* (LPC) to image the cartridge cases and store their unique digital signatures into a database. Then, IBIS was used to compare the digital signatures against all other digital signatures in the database. IBIS is able to compare thousands upon thousands of digital signatures at speeds well beyond human capacity, and is able to link evidence to firearms, crimes to crimes, and cases to suspects. Using IBIS technology, what previously took firearm examiners months is now accomplished in minutes. By 2008, the story the evidence painted was crucial for investigators. The correlation results told investigators a shocking story.

"*What originally appeared as isolated crimes became a correlation between 50 crimes, including homicide, attempted homicide and attempted murder against police officers*," explains Fernando Dias, the LPC firearm examiner. In all, nine firearms were responsible for the 50 crimes that had occurred across northern Portugal.

"*Once the investigation began, and it was working well, we lined up all the cases as being linked,*" said Dias. "*A lot of elements come into play during an investigation. It's not always just ballistics. We work closely to develop intelligence with investigators and we have an intelligence section that puts all that information together.*"

In particular, forensic specialists identified a specific 9mm firearm as having been used in nine separate incidents in Portugal:

January 22, 2001: A Ford Transit was stolen and a firearm was discharged in Peso de Regua.

January 22, 2004: A carjacking and an assault with a deadly weapon were perpetrated by unknown assailants in the city of Porto.

February 22, 2004: In Braga, another stolen Ford Transit was recovered. Inside, two 9mm cartridge cases were found.

March 23, 2004: In the town of Freamunde, shots were fired into a home. No one was hurt, but 9mm cartridge cases were found at the scene.

June 26, 2004: In Delães, Vila Nova de Famalicao, a member of the *Guarda Nacional Republicana* stopped a Ford Orion and asked the driver for identification. The driver fired two shots at the policeman and sped away.

July 20, 2004: During a carjacking of a Ford Transit in Sao Martinho do Campo, a 9mm firearm was discharged by unknown assailants. Later that day, this same vehicle was used in a robbery.

July 21, 2004: In Braga, unknown assailants attempted to carjack the driver of a Mitsubishi Conti. While resisting, the driver sustained injuries to his head. A single 9mm cartridge case was found at the scene.

August 3, 2004: Assailants discharged a firearm during a carjacking near the city of Braga.

November 13, 2004: A carjacking was attempted near the city of Albergaria-a-Velha. Once again, the driver resisted. The unknown assailants shot and killed a local man, João Ferreira Leite, 63 years old. Three cartridge cases were recovered from the crime scene.

The investigation focused on a mobile, organized crime group, but the suspects eluded police. Such groups are common in both Portugal and Spain. They are family-based transnational organizations with members in the 20 to 40-year-old range. Given their nomadic tendencies and their habit of living on the fringe of society, they are difficult to track and investigate.

Although police in Portugal could link all the cases, they did not have any suspects. The trail had gone cold—as had the cases.

In over 80 nations, IBIS technology helps countries link cases across cities, provinces, and countries, through networked access to a centralized database. Both Spain and Portugal adopted this technology early and has made excellent use of it within their country. But now, through the use of the newly configured INTERPOL Ballistic Information Network (IBIN), INTERPOL member countries can now search the digital signatures of evidence in the database of another member country.

Both Spain and Portugal recognized the benefits of joining IBIN and sought membership early in the life of the program. Spain's *Cuerpo Nacional de Polícia* (CNP) joined immediately in 2009, and Portugal's Polícia Judiciária followed in late 2011. Sharing a 1200 km border with its neighbor, each country knew that the evidence in one country might help an investigation in the other. Also, Spain established crime gun protocols that require all seized firearms and ballistics evidence to be entered into its national IBIS database.

What happened next is a testament to dedicated processes, innovative technology, and exceptional police work.

In 2008, in the Madrid, Spain suburb of Fuenlabrada, a Ford Scorpio refused to stop at a police checkpoint. When police eventually halted the vehicle, they found drugs and a single cartridge case. The car's two suspects were arrested for possession of narcotics and were subsequently photographed and fingerprinted. Following protocol, police for the CNP submitted the found cartridge case to the ballistics lab in Madrid. Using IBIS, the evidence was imaged and stored in the database.

When both Spain and Portugal joined IBIN, this cartridge case was among the first to be correlated.

"*I was notified of the hit when I arrived in the morning and was told it was a potential hit with the National Police in Spain," recalls Dias. "I received a call from the CNP in Madrid, and they offered to bring a cast of the cartridge case here to Lisbon. Once they did, we confirmed that it was indeed a hit: the gun that fired that cartridge in Spain was the same involved in all the cases we had linked in Portugal, including the murder of Mr. Ferreira Leite.*"

Criminals are crossing from one (country) to the other without any restrictions. And that's what we are going to do as well."

–Chief Inspector José Dominguez, CNP Spain

Through IBIN, the cartridge case in the Ford Scorpio and the cartridge cases at the murder scene were linked not only to each other, but to a total of 10 crimes. These IBIN hits were integral in allowing the two bordering countries to generate significant investigative leads that resulted in the dismantling of the mobile, organized gang. Armed with the identification of the suspects obtained by the Spanish police in Fuenlabrada, the Polícia Judiciária of Portugal finally had the information that had been eluding them for years.

This connection would have never happened had not people like Chief Inspector José Dominguez of the CNP played a vital role. "This case demonstrates that in a territory with no frontiers (such as the EU), criminals move without borders, thus a crime in Spain links with many crimes in Portugal," explains Dominguez, "Criminals are crossing from one to the other without any restrictions. And that's what we are going to do as well."

The detectives and forensic personnel of the CNP recognized that seemingly insignificant evidence can hold the key to solving a case. Many police agencies would have been satisfied with finding the drugs in the Scorpio and would have discounted the ballistic evidence—especially since no firearm was found with the two suspects. The CNP protocol that treats each piece of evidence as though it were involved in a crime was the key to breaking this case open.

"Previously work like this would have taken years. With IBIN, this could be solved in a week," beams Dominguez, "Now they are going to think twice. In prisons, word will spread that the police are everywhere."

The suspects identified in Spain are currently serving sentences in Portugal for other gang-related activity. As of September, 2012, Portuguese judges are reviewing the additional crimes to determine how the suspects' sentences will be affected. The disclosure laws surrounding the adjudication process prohibit the release of suspects' names and further details.

Fernando Dias is a satisfied man. The transnational, organized gang that terrorized regions of northern Portugal no longer exists and more than half of the members are in prison. "*The link with Spain was the final piece in the puzzle that allowed us to put an end to this gang*," he boasts, "*They are gone. Finished.*"

Conclusion

It wasn't long before the IBIN "road test" helped generate more investigative leads for police to follow on well over 20 gang-related violent crimes including robbery, assault and the murder of a police officer. IBIN proved its value when it counted most, on the streets of Portugal and Spain. It is impressive that although there are already numerous crime links discovered, both Spain and Portugal have only just begun their data sharing process.

Speaking of road tests, Henry Ford helped change the way in which our world moves. He once offered some words of encouragement and caution for those of us who may view ourselves as "experts" in our fields. He said:

> *"...A man who knows a job sees so much more to be done than he has done, that he is always pressing forward and never gives up an instant of thought to how good and how efficient he is. Thinking always ahead, thinking always of trying to do more, brings a state of mind in which nothing is impossible. The moment one gets into the 'expert' state of mind a great number of things become impossible."*

The IBIN path forward deserves more participation by more countries. It must be done in common sense ways so that the inputs and outputs required justify the outcomes realized. This is because while some criminals and some guns may cross international borders, all do not.

Common sense dictates that if your case involves firearms misuse coupled with events, victims and suspects in more than one country, IBIN is certainly worth the shot.

In addition, I would say the same for investigations which involve the criminal misuse of firearms and:

- Crimes occurring within close proximity to international borders.
- Organized criminal groups which typically operate across borders (e.g., outlaw bikers, Maras, terrorists, etc.).
- Specific criminal markets which typically operate across borders (e.g., gun and drug trafficking, poaching of endangered species, high seas piracy, etc.).

Dias and Dominquez and the many others who support and participate in the IBIN Program have again demonstrated that when experts want to prove the value of new tools and techniques like IBIN they need to do it where the rubber meets the road—on the street.

At the end of the day, IBIN has proved that armed criminals in Portugal and Spain do indeed move around and that the evidence can be found on both sides of the "fence" that separates them.

The question is:

Over whose fence is your evidence hiding?

The Most Important Thing

The twenty-one preceding chapters of this book have covered many important things. A strategic planning consultant who provided services to ATF once said: "*While there are many things that are important and must be done—there is only* ***one*** *most important thing*".

It is imperative to identify the most important thing and then reconsider the issue in question from that perspective. This technique helps people to focus on the heart or essence of the issue being considered. Once that focus is clear then it can be supported with all of the other important things that must be done.

The list below represents what this author believes is the most important thing in each chapter. It serves as a ready summary of this book.

- The presumptive/inside-out approach to the investigation of crimes involving firearms presumes that there is an abundance of data inside and outside every crime gun. When fully exploited, this data can be used to generate actionable information of tactical and strategic crime-solving value.
- The adoption of new crime-fighting technologies and the development of processes are required to maximize their benefits (increased speed and productivity) in order to identify armed criminals more quickly before they have an opportunity to shoot and kill again.
- Balancing people, processes, and technology is not only an objective but is a means of overcoming obstacles and bridging gaps to achieve the goal which, in this case, is to provide sustainable and substantial crime solving benefits to the public.
- *The 13 Critical Tasks* developed by law enforcement and forensic practitioners in consultation with renowned academic researchers to integrate and leverage tactics and strategies provide substantial and sustainable firearm crime-solving benefits to the public in an efficient and effective manner.
- A champion or champions having the power to drive change at the required levels must be developed to assemble the various stakeholders needed for taking the presumptive approach as well as provide and advocate resource support for the people, processes, and technology that will be necessary.
- Program integration is a prerequisite for taking the presumptive approach because of: the diverse groups involved, the programs that are already in place, the quantity and nature of the firearm crime-related data to be collected, and the various methods used to process the data.

- The creation of standard operating directives by the senior law enforcement advances the concept of taking the presumptive approach for which the responsible parties are held accountable.
- The comprehensive collection of the many types of Crime Gun Intelligence data should be part of the presumptive approach that includes ballistic data, crime gun trace data, DNA, fingerprints, and trace evidence.
- The transfer of evidence and property to the lab must be done in such a manner so as to avoid delays, therefore resulting in a sustainable solution for taking the presumptive approach that meets the timeliness requirements of all of the stakeholders, even if it requires changes to organizational behavior and procedures.
- The fostering of collaborative discussions is required early in the laboratory process to enable the forensic specialist to provide the investigator with preliminary information in a timely manner.
- A process must be set up to ensure the safe collection of test-fire comparison exhibits and to select ammunition materials which can optimize the automated comparison process.
- Good quality image data collected from fired bullet and cartridge case specimens in both two and three dimensions help guarantee that the best data possible is generated from the automated ballistic imaging process.
- The IBIS correlation result review process is a crucial deliverable in the overall process. Timely and careful attention must be given to this task and its various elements because if a match is missed a second opportunity may not present itself.
- Trained and qualified personnel must be available to confirm prospective matches (hits) and provide detectives with timely investigative leads.
- Protocols must be established to ensure that hit information is communicated to investigators in a timely manner, that the hits are appropriately pursued, and that crime-solving opportunities are not squandered.
- The leveraging of the various output data (e.g., ballistic hits, crime gun trace data, fingerprints, DNA, exhibit data) should be used to improve upon current tactics and strategies, to develop new ones, and to maximize the crime solving and prevention value for the public.
- Regular program improvement reviews help sustain the program by alerting the stakeholders to problems in a systematic way—some problems and low success rates in the beginning are to be expected. They are not reasons to stop, but represent a challenge to do better.
- A sustainable regional crime gun and evidence processing protocol should operate across the affected crime region and should be agreed to and executed by all law enforcement agencies in the region.

- The resolve and effort required to maintain a regionally focused presumptive approach to the investigation of crimes involving the misuse of firearms by balancing people, processes, and technology for sustained effectiveness.

So, while every chapter includes a "most important thing", what is the single most important thing in terms of this book?

Is the most important thing people, processes, or technology? Is it *The 13 Critical Tasks* or maybe the Regional Crime Gun Protocols? Is it ballistics, DNA, or fingerprints? Could it be law enforcement or crime prevention? Harsher penalties or social intervention? More guns? Fewer guns?

Just what is the most important thing?

A clue can be found in the prologue at the beginning of this book. In that section, one murder conspirator trying to calm his jittery coconspirator says: *"they got nothin' on us—all they got is some brass on the floor."*

The labeling of "brass on the floor" as "nothing" much to go on, is quite telling. It tends to indicate that 40 years ago criminals didn't have much fear of ballistic evidence, or of any forensic evidence for that matter, except perhaps for fingerprints. At that time, DNA analysis was still in the research phase.

Today, the situation is very different. Advances in science and technology have helped improve the administration of justice by convicting the guilty and freeing the wrongly accused.

Today, the words "forensics" and "crime scene investigation" are common household terms which lead defense attorneys and juries to demand: "where's the forensics?" While these lofty expectations of forensics in every case can frustrate police and prosecutors, they have served to increase awareness and bring out the best in law enforcement.

So then, you might conclude that the most important thing is *forensics* after all. Wrong. It is not.

This author proposes that the most important thing is ***innovation***—the will to advance, improve, change, and modernize.

The young ATF agent introduced in the beginning of this book pursued innovation and learned a lesson—a lesson that would later be the motivator to help create NIBIN, advocate the presumptive approach, and write this book.

Innovation, in every sense of the word, combined with the will to make it happen is for certain *the most important thing*.

Innovation brought to life by entrepreneurs who founded Ultra Electronics Forensic Technology and introduced the world to IBIS, which is now helping police in over 80 countries solve more gun crimes.

Innovation explored by scientists and forensic experts in the crime labs.

Innovation hammered out and shaped by the men and women in the police departments and prosecutor's offices who dedicate themselves to finding ways to continually outsmart the criminals and to get them off the streets.

Innovation supported by policy makers and legislators who are expected to address serious social problems like crime and violence, and put new solutions in place.

Last and most important, innovation envisioned by all of us, living and working in our communities, concerned about the safety of our families, friends, and neighbors, who see the need for change and do our part to stand up and speak out for liberty and justice for all.

Innovation is **the most important thing**.

Without it, we will not be able to take the presumptive approach to unlocking the story that every crime gun has to tell. Innovation is the key to making the world a safer place in which to live.

Further Reading

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