

The National Firearms Examiner Academy

TOP GUN FORENSICS

The elite academy that is operated by the ATF takes only a few students each year. But experts consider it the most comprehensive preparation for firearm and toolmark examiners.

Written by Dale Garrison

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THE BEST OF THE BEST:

For those who are accepted, an elite academy that is operated by the U.S. Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) may be the nation's most comprehensive preparation available for firearm and toolmark examiners.

Every year, the National Firearms Examiner Academy offers apprentice or entry-level examiners access to some of the best—and perhaps the most intense—training in the nation. This unique program offers one year of hands-on training to those seeking to specialize in firearms and toolmark examination. Designed especially for smaller departments and agencies with limited manpower, the academy offers an opportunity for in-depth training without compromising an agency's on-going operations.

The academy was created to provide a much-needed training resource for law-enforcement agencies. "Early in the 1990s," recalled Glen Beach, the academy's laboratory coordinator, "the Association of Firearms and Toolmark Examiners (AFTE) had recognized the need for a national training program for some time. They approached several federal agencies. And in 1996, they contacted the ATF."

Although the ATF agreed to support the effort, the program did not begin immediately. The ATF spent several years working with AFTE, the field's professional organization, as they examined a number of complex issues, including the types of training needed for this rapidly evolving discipline and the costs associated with such training.



Once the groundwork was laid, the ATF turned to determining the design of each lesson module. It was determined that classes would be instructed by firearms and toolmark examiners from around the country, each with expertise in specific areas of the field. Finally, in 1999, the first class began.

Although the group of students in that first class came from across the nation, they tended to share a common background. Each of the students had already earned a four-year degree with a science emphasis and each was currently working as a firearm and toolmark trainee at a relatively small state, local, or federal laboratory.

"Our goal was to provide training for labs that do not have the staff or personnel to train their own people," Beach explained. "The ideal laboratory would be a smaller lab that has one or maybe two full-time examiners and a backlog. Those are the agencies that cannot afford to lose one of those two people for training for two years. We have applications from larger cities that may have six or seven people, but if an agency has that many examiners, it can usually afford the training on its own. Our goal is to provide this training where it otherwise wouldn't be feasible."

Preparing for what's to come

For Beach and his staff, the work for one class begins before the graduation of the previous group. The first challenge is simply the target class of 10 to 14 students and one alternate. "It is difficult to make the selections. We typically have 30 applications and it is not easy making those final cuts."

The program selects alternates because the challenging nature of the program often causes one or two of the students to drop out of the program during the first or second phase. Because the alternate is fully involved in those phases, he or she may be promoted to full-student status, allowing the program to continue with a full complement of students. If the alternate

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for a given session is not called, he or she is automatically enrolled as a full student in the following year's class.

The intensity of the program is what sets it apart from programs that are offered in-house by most agencies—especially the smaller agencies that are lucky to have enough people to cover the caseload, let alone manpower for training. Over the course of one year, the students must pass four phases, each of which is uniquely challenging.

Graduate Kristin Gerber said the intensity of the training might come as a surprise to some people. "A year might sound like a long time," said Gerber, who completed the academy in 2002. "But when you start going through the reading and the practical application and the research and the exams, it's a challenge. It is also very rewarding. And by the end, you feel like you've learned a lot. You have a good basis to start your career."

While some people may picture the students packing up to go to classes at the academy for a year, the first phase of their training actually takes place at each student's home laboratory.

"Phase I is pre-course work at their home labs," Beach explained. "We send out all of the materials for them to learn in preparation for the lab work."

Although the academics are done at the student's home lab, this stage of the program is not an easy one. This pre-course phase includes research papers in the fields of black powder, the evolution of early firearms and modern

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ammunition development, as well as the history, principles, equipment, and current developments in firearms identification. Each student is required to conduct research and gather additional references in order to complete the assignments. This phase is definitely labor intensive: students generally study 30 to 40 hours a week in order to complete assignments.

Gerber said the intense effort puts a premium on organizational skills, something that is not always evident to those outside the profession. "When you look on the surface, you don't understand the scope of the field," she said. "There's so much information, so much that goes into making one identification. If you just watch a movie you don't realize that."

The four-month Phase I also includes a number of deadlines. Missing only one deadline results in a strike against the student. As in baseball, three strikes result

in an "out"—although in this case, an out permanently removes you from the game.

Preparation on campus

Meanwhile, the ATF staff prepares for the academy's Phase II. This session takes place at the ATF's new Forensic Science Laboratory in Ammendale, Maryland, a suburb of Washington, D.C. Created as part of the 2003 reorganization of the ATF, this state-of-the-art facility focuses on the ATF's forensic efforts. The new facility replaces one that was located in nearby Rockville.

The 15-week Phase II begins about mid-July and features some of the academy's most intense, hands-on work. Students participate in group and individual activities, practical exercises, written examinations, as well as tours of ammunition, firearm, and tool manufacturing facilities. The tours even include local museums.

One of the most unusual aspects of this phase involves the students themselves. Many are in their late 20s and fresh out of college. Others are veteran officers who have served for several years and only recently entered or increased their efforts in firearm and toolmark examinations. These diverse personalities and backgrounds are both a challenge and a benefit.

"You can have conflicts over the course of 15 weeks with people whose backgrounds are that different," Beach noted. "But we really have a very good blend. And of the 52 people we've

Curriculum Overview for the National Firearms Examiner Academy

Phase I – The first phase of the program is a four-month period during which the student completes and submits a series of assignments prior to reporting to the academy.

Phase II – This is a 15-week instructional session at the ATF's Forensic Science Laboratory that is located in Ammendale, Maryland. This phase is a content-intensive section where students also work evenings and weekends.

Phase III – This phase is a four-month period in which the student returns to his or her agency laboratory. The student completes a research project which has been pre-approved by

academy instructors, as well as the student's supervisor at the agency laboratory. The student will also complete simulated firearm and toolmark cases provided by academy instructors. These will be presented in the courtroom scenario in Phase IV.

Phase IV – The final phase is a two-week followup school in the Washington, D.C., area that guides the student in preparation for the presentation of expert testimony. This phase will also include pretrial conferences and the preparation of exhibits. In addition, the student will also present the research project completed during Phase III.

For information about how to apply for the National Firearms Examiner Academy, please contact Glen T. Beach, Laboratory Coordinator, at 240-264-3849

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graduated, all have been very professional. They realize that they represent their agency and the ATF as well.”

Beach also utilizes the differences between fresh-faced college graduates and veteran officers. “We find out in advance how much training they have received,” he said. “Some are brand new and haven’t received any training. The key thing is who has had the most microscope work—that’s the instrument that drives our field. So we pair our students into two-member teams where the people who have the most experience are with those who have the least experience. We believe that’s a good learning experience for both of them.”

Everyone is a student

Beach also has homework of his own to do, even during the academy. Working constantly to keep up with an ever-changing field, he visits the AFTE website and other areas daily to check for new trends or emerging techniques. “I am logged on every day, not just to see new techniques, but also to see what techniques are accepted. That’s the challenge. We always have to be concerned with what techniques are proven and will stand up in court.”

Other preliminary work by Beach and his staff pays dividends during Phase II. As part of the program, the students visit firearm and tool manufacturing companies to see firsthand how equipment is made. This “over the shoulder” look at manufacturing techniques can be critical during future investigations.

“That’s where they can see how these things are made and how a given process will leave identifiable markings,” Beach explained. “You can read about it in books, but when you see the milling and see the rifling, you gain a much deeper understanding. We believe every trainee should go to as many tours as possible.”

This is also an area where the ATF’s long-established contacts play an important role. “Last year, we made two separate, week-long trips to 18 firearms companies up and down the East Coast,” he noted. “Our contacts allowed us to set up behind-the-scenes tours so the students could see things the average person wouldn’t get to see.”

Learning to take the stand

There is another activity that takes place during Phase II that might seem out



Graduating classes at the ATF's National Firearms Examiner Academy are not very large—but they can be justifiably proud of the work they have done as they worked their way through the curriculum.

of place: an introductory course from the widely known Toastmasters public-speaking organization. This introduction into public speaking is actually the first of several carefully organized efforts to hone the students’ presentation skills with an eye to their eventual role as expert witnesses in courts of law.

“We schedule that Toastmasters’ class early because it is designed to break the ice—to get the students to know each other and be comfortable standing up in front of class,” he said. “That’s not something they look forward to, but it’s very important.”

The depth of the program is illustrated by the total of 18 modules—or sections—included in this phase alone. Other highlights include presentations by past presidents of the AFTE and lab tests that include firing guns in both a water tank and on a range. Students also perform a trajectory analysis, toolmark analysis, gunshot-residue analysis, and they even have an opportunity to shoot at a car and fill it with bullet holes in order to analyze all of these components together.

Other details may appear surprisingly fundamental. For example: Phase II’s look at firearms history even includes a look at black powder, explosives, and the role of early firearms. Yet only by building from this background can students see the range of manufacturing techniques and other issues that have led up to modern technology.

Although Phase III sees the students returning back to their home labs, the workload does not get easier. They now

must work on their own research, efforts that often involve more than 300 hours of work. The students identify the subject of their research when they begin the academy.

“When they first come to Phase I, we have them outline a research project—it’s basically a contract,” Beach explained. “We decide if it is a worthy contract. We try to get them into topics that are newer or more interesting. Many of these are eventually published in the AFTE journal. The more up-to-date it is, the better it is for everyone. Their research can affect the field.”

Also during Phase III, each student is assigned three mock firearm cases and one mock toolmark case. They must examine the evidence and generate a formal report that includes all practical notes and photos.

Once their “cases” are complete, the students send their formal reports to Beach, who shares them with 14 “jurors.” This jury is comprised of veteran firearm and toolmark examiners who look for everything from typos to technical mistakes.

Trial by jury

This actually begins a key process that culminates during Phase IV. It is a “moot court” in which students present their evidence to a judge and jury—and face cross examination from defense attorneys. When the jurors first receive the material in Phase III, one of their jobs is to make up questions for defense attorneys. With the jurors capable of generating 40 to 50 questions based on what they have reviewed, it is obviously to the student’s benefit to make their Phase III work as accurate as possible.

Other aspects of the Phase III presentations are equally diverse. Students are ranked on everything from the quality of their PowerPoint presentations to the originality of the topics. From all of these, the best presentation is selected and that student earns an expense-paid trip to the AFTE’s annual conference. Once at the conference, this student has the opportunity to take—free of charge—any course that is offered at the conference. There is one requirement for the student who receives all these benefits: The student must present the research project

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at the conference, facing an audience of more than 600 professionals from around the world. Although these presentations can spark apprehension, the results indicate that the academy is producing highly qualified students.

"I've talked to a lot of people at the conference and they are very excited about the students coming out of the laboratory," said Beach.

Phase IV may top even the earlier challenges. The key to this portion of the academy is the moot court that seeks to provide the worst that an examiner could face in a court of law.

During the moot court, students must testify before a 14-member panel that serves as a mock jury. This testimony follows two days of training on topics such as preparation as expert witnesses, defense tactics, and other intricacies of the law. As with everything else in the academy, the lessons the students learn are based on the first-hand knowledge brought to the academy by experienced professionals.

"We have a defense expert come in who shares their defense tactics," Beach noted. "We put the students through some tough drills to become used to what they might face."

Moot court in a real courtroom

At this point, the moot court begins. With the panel of 14 senior firearm and toolmark examiners, the court takes place in a Washington, D.C.-area federal courtroom. Practicing attorneys take on the roles of prosecutor and defense attorneys.

"Our goal with the moot court—and graduates agree—is to make this the toughest court they will ever face," Beach said. "When they go into an actual court, it won't be as rough. So those are two very stressful weeks. The students are exhausted after that. It is difficult to watch them...but it's for their own good."

One element that is surprising about all of this involves the organization of the academy. "We have a staff of three," Beach laughed. "We work pretty hard to put all of this together."

Beach and these members also are called to apply their expertise in special situations such as the Washington, D.C. sniper case. Beach admitted that the work in the field is professionally satisfying. "It's easier to work cases and to go into court than to coordinate the academy," he said. "Managing the academy has been a real challenge. There really was no model for us to follow with this type of innovative training program. We essentially just developed everything on the fly."

Gerber noted that academy students are also aware of the pioneer aspects of the profession. Her academy research paper added to the growing collective knowledge of the field of firearm and toolmark examination, something she still recalls with pride.

"It was a lot of hard work," she said. "But when someone calls and tells me that they went to court and they used my paper... That really makes me feel good."

Immediately after moot court, the students are rewarded with graduation. Although the academy's quality is recognized, Beach stresses that it is not a certification. "When they graduate,

we present each of them a certificate of completion," he noted. "But we do not certify the students as examiners. That is why it is important to have an on-site trainer (at the local agency). When the students go back, some require an additional year of training. Some students are ready immediately. But we leave that up to the local lab personnel."

Although the high level of training may seem stringent, it is preparation for the demands that are placed on firearm and toolmark examiners. "We expose our students to 36 to 40 hours of bullet comparison, but in order to be certified they probably need six months or so," Beach explained. "It is basically a matter of getting them on the microscope and giving them bullets. That is probably the biggest determination (for proficiency) before certification can take place."

Of the academy's original 52 graduates, all have gone on to become certified. "I'm proud of that," he said.

Unfortunately for Beach and the staff, there is usually no time to rest. Within two weeks of graduation for one class, the next class must begin.

Beach also tries to continue broadening the student representation at the academy. The 52 graduates currently represent 28 states; Beach would like to see every state in the country represented. "Many states do like to train in-house," he said. "But our goal is to train one individual from every state. The word is out."

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