Readers of this magazine usually have a love/hate relationship with the 1911. The issue is that the 1911 is a finicky design and has earned itself a reputation as a handgun that may or may not run properly out of the box. When my interest in 1911s started decades ago, I learned not to even waste my time and ammunition test firing them because, chances were, they wouldn’t work reliably. Instead, I took them from the gun store counter to a gunsmith for a reliability package. Usually, a trigger job and some component changes.

Tom Givens, owner of Range Master in Memphis, Tennessee, its lead instructor and 1911 aficionado, recently proclaimed, “The 1911 design does not lend itself well to modern manufacturing methods. Most over-the-counter 1911s still need some attention from a qualified hand-fitter (pistolsmith).” That may be a bit extreme, as manufacturing techniques have improved and most contemporary 1911s work just fine. But there is a quantifiable benefit to hand-building a 1911.

The Mystery
It’s easy to build a reliable 1911. It’s easy to build an accurate 1911. However, it takes the skill and handwork of an experienced artisan to extract the ultimate accuracy out of the 1911 while maintaining complete reliability. The proliferation and success of high-end, high-cost, custom 1911s is a testament to that fact.

The exact process of accurizing and increasing reliability has always been shrouded in mystery to me. I understood the concepts, but not the details. Perusing the Web site of custom gunsmith Jim Garthwaite, I noticed that he offered a 1911 pistolsmithing class. Having met Jim at several training events I knew of his work, and jumped at the chance to attend.

Jim Garthwaite, Pistolsmith
Jim opened his shop in 1978 with a specialty in defensive Model 1911s and Browning Hi-Powers. He continues to be a one-man show. Every facet of the work is done personally, and every gun he works on is treated like his own. As a founding member of the American Tactical Shooting Association, he is a practicing tactician and the lessons he learns perfecting the craft go into every one of his guns. As a self-taught smith, he takes special pride in his selection as the American Pistolsmith Guild 2004 Pistolsmith of the Year.

Learning to build a custom 1911.

BY DAVID KENIK
Pistolsmithing Class

Jim Garthwaite runs five days in his central Pennsylvania shop and is billed as providing “a thorough knowledge and understanding of the procedures to build and maintain the Browning-designed pistol.” The tuition includes a forged 1911 frame and slide, Kart or Bar-Sto match barrel, Heinie or Novak fixed rear sights, all component parts, cocobolo stocks, Teflon coating or bluing, and personal instruction. Scheduled four times a year, the class is limited to six participants so Jim can offer plenty of personal attention. The project started with a 1911-A1 from Springfield Armory and included many new, oversize components that would have to be hand-fitted. Although the slide and frame already worked together, more work was required to tighten the rail for better accuracy.

Satisfaction came first in fitting and assembling it themselves.

Springfield Armory Components

All Garthwaite pistols start life as a fully assembled, bare-bones, basic Springfield Armory pistol. Jim works with Springfield Armory because of his opinion of the quality and consistency of its products. Jim starts with complete guns since they are no more expensive than purchasing the parts separately. Besides the forged slide and frame, firing pin, guide rod, magazine catch, springs and pins, all factory components are replaced with oversize parts that are meticulously hand-fitted for perfect fit and function, which affords Jim’s pistols their superb accuracy and reliability. Jim Garthwaite limits the number of students in his class to six so that everyone gets personalized attention. The process entailed measuring the height of the rails in the slide, shimming the rail slot in the frame to match the rail height and planishing down the frame’s rails with a hammer until the slide fit was tight, even and without wiggle. Next we filed off the misplaced steel and tapped the slide and frame together with 600-grit aluminum oxide compound. The process was repeated several times until the slide fit properly. When just a touch of play was left, Jim stated that the minimal residual movement would be removed once the barrel was fit. Surprised again, my slide was not that far off, and the fitting process was much easier and faster than I anticipated. However, that’s not always the case. Sometimes the factory slide fit is quite loose, and the tightening process becomes lengthy.

In addition to the quality of the barrel itself, one of the most important elements of a pistol’s accuracy is the fit of the barrel to the slide. Extraneous movement must be eliminated so the barrel returns to battery consistently with every shot. Starting with an oversize Kart match barrel, the first step was to measure the hood width and length and compare it with the breech face to determine how much material needed to be removed. Rather than doing all the work manually, whenever possible Jim prefers to do about 90 percent of the cutting by machine and leave a few thousandths of an inch of material for hand-fitting. This greatly speeds up the workflow, yet leaves the final fitting to be perfected by hand.

After the excess barrel hood material was machined, the final portion was hand-filed and -lapped. With the barrel installed and held in battery, the barrel lugs were then hand-cut. This was done with both the slide and barrel positioned on the frame. We used a lever to aid in pushing the slide and barrel into the special lug cutter as it was rotated by hand. This ensured that the lugs were cut to the correct position and enabled the thumb safety to be engaged. Again, hand-filing and -lapping finished and smoothed out the operation. After fitting the barrel link, the last process in the barrel installation was the sizing and fitting of the barrel bushing. The barrel fitting was a time-consuming process, but absolutely necessary to assure accuracy.

Students learn firsthand how custom pistolsmiths fit and blend parts such as a beavertail grip safety and internal components such as the barrel lugs and barrel link. Although much of the work is done by hand, Garthwaite still uses machinery for certain aspects of the build process.
spring within the slide and mate it to the frame to check the function. This step was encouraging, as we saw for the first time that the barrel lowered and returned to battery perfectly with the cycling of the slide. It was also exciting to see that the final fitting of the barrel tightened the slide fit to the point that there was absolutely no extraneous movement—a hallmark of a well-built pistol.

Checking the head space with go/no-go gauges, we determined that the chamber in my barrel needed to be reamed to fit the cartridge properly since we reduced the barrel hood length. We increased the chamber's depth by hand-reaming it a few thousandths of an inch deeper. To ensure that we didn’t cut too deeply, we reamed it in multiple steps until the barrel locked perfectly with the go gauge in the chamber.

Installing a Wilson Combat grip safety was next on the list. The contour of the grip safety that surrounds the hinge location was smaller and shaped differently than the frame, so we used a bolt-on jig as a guide and removed most of the excess frame material with a belt sander. The frame and entire length of the grip safety were then reshaped by hand-filing until they melded together perfectly. Though not necessary for reliability or accuracy, a custom-fit grip safety gives the pistol a professional presentation and greatly affects how the firearm feels in the hand.

With all the hand-filing we did, I received plenty of experience with a gunsmith’s best friend, Dykem. This colored liquid is applied along parts that need to be fitted together. Quickly drying to a very thin coating, the Dykem is removed where the parts rub together, leaving a visual indication of the exact location where additional filing is required. Difficult-to-fit parts such as the grip safety required numerous applications.

After shaping and fitting the safety, the fire-control parts were installed. We started by cleaning out the frame’s trigger bow slot and fitted an oversize trigger.

Building a custom 1911 in Garthwaite’s pistolsmithing class is more than how to make it aesthetically pleasing. He teaches how to make the pistol function safely, reliably and accurately. Before the class is over, students take their 1911s to the range to fit the sights to a particular load. A sight adjustment tool joins the class on the bench for any necessary windage adjustments.

As part of tuition, students get the choice of finishing their 1911 with a black oxide or black Teflon coating. The author chose black Teflon for its low reflectivity and high lubricity. The front sight features a brass bead, and the rear Heinie sight can be used for one-handed slide manipulation. Everything down to the fitted Kart .45 National Match barrel suggests that this was built by the hands of a well-trained 1911 pistolsmith.
in place. Those that didn’t had their bows adjusted. The hammer, sear and disconnects that we used were specially built for Jim to his exacting specifications. In addition to being used in his custom pistols, they are also available through his Web site.

We first tested the rear engagement to the hammer with the use of jigs that mounted onto the frame for easy inspection of the parts. The jigs inserted into the rear and hammer pin holes so they held the parts outside the frames in the precise relationship they will be in when installed. As it turned out, the sears and hammers needed almost no adjustment due to the outstanding precision of the Electrical Discharge Machining (EDM) used in their manufacture. With the fire-control system in place and the trigger breaking clean at about four pounds, we adjusted the trigger’s takeup and overtravel and made the final functional adjustments to the safeties.

The mainspring housing needed major reshaping to meld the edges of the housing to the frame so it looks and feels like a single part. Like the grip safety, the housing is not responsible for increased accuracy or reliability, but it greatly affects how the pistol feels in the hand and its visual appeal.

To reduce the possibility of an accidental discharge of a live round hitting the ejector and eliminate a common snag point, the angle of the ejector was reshaped and the overall length was shortened to allow a cartridge to be ejected with plenty of clearance past the barrel opening and ejection port. Depending on the design, the ejector was then reinstalled with a pin or Loc-tite. Likewise, the extractor was tuned to ensure that it located itself properly within the frame and achieved a positive lock on the case edge without being overly tight.

With all the integral components reshaped, fitted and installed, the frame’s slide rails and the rear of the slide, along with the extractor, were filed and reshaped until they were flush fit.

The final part to be fitted was a set of Craig Spiegel coozehold grip panels. We confirmed that the screw holes were sized and located correctly and did a small amount of carving to the left panel to clear the rotation of the safety. Once this was completed, we were finally able to put the fully assembled and fitted product in our hand. I might be biased, but it was the best-fitting 1911 I have ever held. The difference between our handwork and my other 1911s was clearly the work we put into melding and reshaping the grip safety onto the front sight and on a spacer that sat atop the rear sight. The use of the spacer formed a slight angle on the front sight so the shooter only sees the front edge of the sight and not the top. The filing was done in several steps, with us stopping to test fire with each increment until the point of aim was exactly where we wanted it. During the accuracy bench tests I found that feeding was an issue with the Coon-Box DPX ammunition I carry due to its very wide mouth. We tested the pistol off the bench, and it fed flawlessly when handholding. We made note to adjust the barrel ramp slightly when we returned to the shop.

The rest of the range time was primarily devoted to function testing. We shot two-handed and one-handed and purposely shot limp-wristed in an attempt to foul the gun’s function, but the pistols took all we could dish out without hesitation. Final cleanup of scratches and rough edges was done back at the shop after the range session. After that, all that was left was surface blasting with aluminum oxide to smooth the surfaces, application of the finish, setting a gold bead in the front sight and pinning the sight to the frame. Jim completed these on his own after the class due to time constraints. As part of the tuition, we had a choice of black oxide (bluing) or black Teflon coating, both of which Jim does in-house. I chose black Teflon because of its low reflectivity and high lubricity, which reduces the need for oil and helps keep the pistol running.

There were lots of steps that we performed that I did not detail here. If I had, this article would have turned into a book. The attention detail required to build a pistol of this quality is astounding. Every component, save for the firing pin and a few springs, was modified, and in most cases several functional modifications were made to ensure that the pistol performed to the highest standard of reliability. This class has instilled in me a tremendous appreciation for the knowledge and skills needed to build a pistol of this quality and further deepened my respect for John Browning’s design, which has not just sustained a century, but continues to serve as a platform for our military, police and the armed citizen.

Parting Thoughts

I would be remiss if I did not admit that I was somewhat apprehensive about spending a week behind a bench, but Jim’s teaching and personal attention made it easy and the hours flew by quickly. Jim not only taught us what we needed to do, but why it was necessary, and he demonstrated how each part worked and interacted with the rest of the system. This information is not only useful in building pistols, but for diagnosing malfunctions as well. If you own a 1911, you will find this class invaluable to understanding the function and operation of every component. In addition to the knowledge and experience gained, I am now the proud owner of a well-built defensive pistol that I painstakingly fit and assembled myself. This will be remembered with each pull of the trigger for years to come.

CARRY IN STYLE

The belt, being what the public views, handily hides its true purpose with its colorful, exotic skin; slender, tapered design; and fancy, silver-toned buckle set. The belt is 1 1/4-inch design and is also leather lined, as is the magazine pouch. We cannot say that we were surprised when we first held the holster in our hand. I was expecting a gorgeous holster set, and that’s exactly what we received. The skin is incredible, the molding and stitching are equally impressive, and the tension is perfect right out of the box. Likewise the belt and magazine carrier. One comment, however, is that the carrier fit a bit looser on the belt than I am accustomed to, but I did not find it to be an issue with use.

Located in El Paso, Texas, El Paso Saddlery was started in 1909 with a philosophy: “For those that know, for those that need.” Today it employs the work of 16—the cutting, stamping, carving and fitting are all done by hand. All holsters and other products are made to order. It can accommodate just about every model handgun, and its work typically takes about eight to six weeks.

For my custom 1911 project, I ordered a holster, belt and magazine pouch done in the Exotic Crosshatch style in brown Spanish Bull. Spanish Bull is a leather with superfine grain. Other exotic-hide offerings include black or brown ostrich; black, cognac or chocolate crocodile; black or chocolate shark and stingray. The Exotic Crosshatch holsters are leather lined, and both the front and back are covered with the customer’s choice of skin. A user-adjustable tension screw combined with hand-molding securely cradles the gun. The holster is designed with a flat back, which increases comfort for all-day carry. The matching belt is a tapered, 1 1/4-inch design and is also leather lined, as is the magazine pouch.

The belt, being what the public views, handily hides its true purpose with its colorful, exotic skin; slender, tapered design; and fancy, silver-toned buckle set. The belt offers the support needed to comfortably carry its weight, yet features an appearance of the finest dress design. All too often a product doesn’t come close to matching its marketing, but I can report that this is not the case with El Paso Saddlery’s holsters. If you are looking to carry in comfort and style, consider El Paso Saddlery. For more information, visit esaddlery.com or call 915-544-2233. —DK

GARTHWAITE’S PISTOLSMITHING CLASS

BOOK OF THE 1911