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INSIDE THE ARCHIVE

SIMPLE ACTION WORK ON THE BROWNING HI-POWER

GOVERNOR JEB BUSH SIGNS FLORIDA'S NEW SELF DEFENSE LAW • THE ANATOMY OF THE SAVAGE MODEL 24 • BIG-BOY...

ORIGINAL METHODS. MODERN ACCESS.

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RIFLES

Governor Jeb Bush Signs Florida's New Self Defense law

BY AMERICAN GUNSMITH EDITORS NOVEMBER 2005

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In a recent ceremony at the state capitol, Gov. Jeb Bush signed Florida's "Castle Doctrine" into law. Sponsored by Senator Durell Peaden and Representative Dennis Baxley, the bill (SB-436) unanimously passed the Senate and overwhelmingly passed in the House, 94-20. Prior to signing the bill, supported by the National Rifle Association (NRA), Gov.

Jeb Bush stated: "It's a good, commonsense, anti-crime issue." The "Castle Doctrine" simply says that if a criminal breaks into your home, your occupied vehicle, or your place of business, you may assume he is there to do bodily harm and you can use any force against him. It also removes the "duty to retreat" if you are attacked in any place you have a right to be. Furthermore, this law provides protection from criminal prosecution and civil litigation for those who defend themselves from criminal attack.

Past National Rifle Association (NRA) president and current Executive Director of Unified Sportsmen of Florida, Marion P. Hammer, stated: "Existing law is on the side of the criminal. The new law is on the side of the law-abiding victim." She continued, "To suggest that you can't defend yourself against a rapist who's trying to drag you into an alley or against a carjacker who's trying to drag you out of your car is nonsense.

The ability to protect yourself, your children, or your spouse is important, no matter where you are." Hammer concluded by saying: "I want to thank Governor Bush and the bill sponsors, Sen. Peaden and Rep. Baxley, for supporting this vital measure. This law is about affirming that your home is your castle and, in Florida, you have a right to be absolutely safe inside its walls." As your faithful editor, I don't mean to gloat, but our governor and our state legislature have made me proud to be a Floridian.

MEASUREMENT & INSPECTION

The Anatomy of the Savage Model 24

After making its debut over 50 years ago the Model 24 has become far more than just a lost hiker's best friend.

BY CHICK BLOOD NOVEMBER 2005

ORIGINAL PP. 3-7

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There's some debate on exactly why the Model 24 over/under has lasted as long as it has. With a .22-caliber upper barrel and a .410-gauge lower, some say because the 24 rendered admirable service as a survival gun. Others argue that it gained longevity when optional centerfire cartridges came to occupy the upper barrel and larger gauges were offered in the lower. Both arguments are probably correct.

When this combination rifle/shotgun first appeared on dealer shelves about 1950 in its "survival" configuration, it had atop lever to open the action. Evolving through the years, additional calibers and gauges were offered along with side and bottom action-opening levers and a swinging rather than a unified locking block.

The last side-lever model, the 24MS, went out of production in 1971, and the introduction of centerfire uppers combined with .410-, 20-, or 12-gauge lowers in 1989 did away with all variations on the top-lever guns. Presently, the rimfire models still employ a swinging locking block. All others use the one-piece design. The addition of heavier centerfire calibers put to rest the thought that the Model 24 was merely good company for a camper in trouble.

Configured thusly, it gained popularity as a classic European idea that found a home in the hands of American hunters—while losing none of its luster as a savior of those who might get lost in the woods. As examined here, the current Model 24F is available with .17 HMR, .22 LR, .22 Hornet, and .223 Remington uppers over a 20-gauge lower. The 12-gauge lower is not paired with the .22 LR, but the 12-gauge is available with the other centerfire cartridges as well as the .30-30 Winchester.

I, for one, am thankful the side-lever and bottom-lever 24s are no longer made, because all top-lever models can be approached in the same manner. The side and bottom-lever models are different animals, with some internal parts that are theirs alone. Though what you're reading will be of some assistance when working with any Model 24, you could run into trouble if the gun you're working on doesn't have atop lever. Those earlier models won't be detailed here.

Neither will field stripping a 24F or any of its top-lever cousins. Heck, if you can take off the forend, open the action, and detach the barrels, you've got them field stripped. Detailed Disassembly Now, before we move along with this project, get your hands on a clear plastic bag large enough to easily fit over the back end of the receiver. On the rifle I received, I needed

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B “A” is the lockingbolt plunger; “B” is the top-lever plunger; and “C” is the mainspring. A small screw located at “D” in the receiver behind the safety retains the safety spring and detent. a 7/16-inch socket on an extension to loosen and back out the stock bolt (#51). This bolt could have something other than a hex head, but whatever tool you use to get it out will have to be connected to along shank and have a business end that marries well with the head or slot.

The stock is taken off to the rear, revealing the inner action. Don’t do anything else until you’ve memorized the difference between the locking-bolt plunger spring (#37) and the top-lever plunger spring (#39). They’re not interchangeable. Savage has tried to make this fact unforgettable by color coding these springs. If someone at the factory has slipped up and there is no code on the springs, swab one of them with a magic marker.

Also study how the head of the mainspring-plunger assembly (#48) mates up with the rear of the hammer (#1). Remember what you see. These two elements must be in the same position after reinstallation. While in the A D C general vicinity, you might as well take a close look at the rear end of the receiver. The hole at the top is for the locking-bolt plunger (#38). The hole under it is for the top-lever plunger (#40). The large threaded hole further down is for the stock bolt.

Under that is another hole that serves as home base for the mainspring-plunger seat (#46). The latter part is key to further disassembly. The hammer has to be in its fired

(forward) position and the receiver supported with the plastic bag slipped over it. Using a drift punch, push #46 out to one side. As you’ll see instantly, the bag captures the seat, mainspring (#47), and possibly the mainspring-plunger assembly (#48), preventing them from flying to points unknown. There’s no pressure on the hammer now.

It’s the rebounding type. After the rifle has been fired, the trigger gets behind a notch on the hammer body to prevent contact with a primer. Further defined, when the hammer is in the rebound position, it is forward with a distinct space between the selector (#2) and the firing pins (#6 and 8). Additional assurance the gun will not fire is provided when the cross-bolt safety (#29) extends from the right side of the receiver. Older Model 24s had to rely on hammer rebound alone to prevent an accidental discharge.

Sooner or later you will want to remove the triggerguard (#45). You might as well go ahead and do it now by backing out both guard screws (#44). This will uncover a hole in the receiver directly under and in line with the top-lever screw (#43). Insert the proper size Allen wrench in the hole and remove the screw. Another small tool, such as a flat-blade screwdriver, can be used as an aid to push down the top-lever sleeve (#42) and separate it from the top-lever stem.

Once the lever is out of the receiver, the locking bolt plunger, its spring, and the top-lever plunger are freed up. Let me tell you something about the locking-bolt

plunger stem. It’s closely related to the rebounding hammer and is adjusted to control the amount of space between the hammer/selector and primer. If this space is excessive, misfires occur. If it is insufficient, unexpected discharges can happen when the action is closed.

You can lessen the gap by bending the plunger stem up, and increase it with a downward bend. The amount of bend is unpredictable and has to be determined according to the existing condition with frequent testing. I’ve used resized shotgun hulls with primer and no powder along with centerfire cases set up the same way to run my tests indoors. CB Short .22s come in very handy for checking out a rim-fire gun when you can’t get to a range. They make little more noise than an air gun puffing off.

Some of the next steps in disassembly involve the pins in the Model 24F. They can’t be approached in the usual manner, because they’re all drive-locked in place during factory assembly of the rifle. They have been upset at one end, and area larger diameter at that end than they are at the other end. It’s essential that you determine which end of the pin you are about to address by close examination under magnification.

To avoid breakage of internal parts, all pins must be driven out toward the upset end and reinstalled with the opposite end first.



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Savage Model 24F Combination Rifle/Shotgun 1 Hammer Assembly* 1 Hammer* 2 Selector 3 Selector Spring 4 Selector Plunger 5 Selector Pin 6 Top Firing Pin 7 Top Firing Pin Spring (Rifle) 8 Bottom Firing Pin (Shotgun) 9 Firing Pin Spring (Bottom) 10 Firing Pin Retainer Plate 11 Firing Pin Retainer Plate Screw 12 Extractor Assembly* 13 Extractor Pin 14 Extractor Plunger Spring 15 Extractor Plunger 16 Extractor Spring 17 Extractor Lever 18 Screw, 5-40 x 1/2" Pan Head 19 Extractor Lever Guide 20 Extractor Screw 21 Front Sight Base 22 Front Sight Screw 23 Front Sight Blade, 5/16" 24 Barrel Assembly* 25 Frame Assembly* (Specifications subject to change without notice) 26 Top Lever 27 Firing Pin Screw 28 Hammer Pin 29 Safety 30 O-Ring 31 Safety Spring 32 Detent Ball 33

Safety Screen (Screw) 34 Trigger Spring 35 Trigger 36 Trigger Pin 37 Locking Bolt Plunger Spring 38 Locking Bolt Plunger 39 Top Lever Plunger Spring 40 Top Lever Plunger 41 Locking Bolt Yoke Assembly* 42 Top Lever Sleeve 43 Top Lever Screw 44 Triggerguard Screw 45 Triggerguard 46 Mainspring Plunger Seat 47 Mainspring 48 Mainspring Plunger Head Assembly 49 Butt Plate Screw 50 Recoil Pad 51 Stock Bolt 52 Stock Bolt Lock Washer 53 Stock Bolt Flat Washer 54 Stock Assembly 55 Swivel Stud, 1/2" 56 Forend Screw 57 Forend 58 Rear Sight Assembly 59 Rear Sight Screw 60 Scope Mount (Not shown) *Factory installation only.

Parts not illustrated include the choke tube wrench, choke tubes, and the 12 gauge/.410 adaptor (which may not be available for current production models).

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The first pin to be so identified (#28) retains the hammer. Drift it out, then lift away the hammer/selector assembly. After determining in which direction the trigger pin (#36) is to move, but before moving it, note how the trigger spring (#34) is positioned with its long leg to the rear. After that, drift out the pin to free the trigger and spring. About halfway up the stock shoulder, at the rear of the receiver above the trigger, you'll find a small set screw.

Officially identified as the safety screen (#33) by Savage, when you remove it you'll be able to push the safety (#29) out to the right. A very small Allen wrench or even a straight piece of paper clip can be inserted into the front of the hole to eject the safety detent (#32) and spring (#31) out to the rear. All these components except the safety itself are very small. Don't lose them.

Everything in its way is gone now, so push the locking-bolt yoke assembly (#41) to the rear and out of the receiver. (Note: On rim-fire guns, the yoke's front end has no attached locking block.

A separate, swinging locking block lives in the receiver, is retained by a pin located above the hammer pin, and you already know what you have to do with pins in a Model 24 before moving them.) Remaining in the upper receiver are the firing-pin retainer plate (#10), its screw (#11), the firing pins, their screw and their springs (#7 & 9). All are removable after backing out their screws. The firing pins are model-specific, even for the same caliber guns. So are their return springs.

Any replacements for these components must be ordered according to the gun's serial number. The same is true for the hammer/selector assembly, which should not be further disassembled unless the selector is broken. There's not much for you to do with the front end of the gun. The extractor assembly (#12) is driven into the barrel before chambering and cutting that section of the chamber where the cartridge rim sits.

The latter process is known as "heading." After chambering and heading, the extractor assembly is driven out, dressed to slide back and forth freely, and fitted so the wall of the chamber matches the extractor cut. For all the reasons just stated, extractors are not interchangeable, and taking on fitting one yourself would be a massive project accompanied by a cost exceeding that of the rifle. If it ever becomes necessary, let the factory do it.

You can, however, easily and economically perform such repairs as the replacement of the extractor plunger (#15) and spring (#14) by driving out their pin (#13). You can also handle minor mishaps befalling the extractor lever (#17), its screws (#18), and guide (#19). On the model I'm discussing here, the guide is retained by the screws and holds the lever in its barrel lug cutout. The lever is the thing that kicks out the extractor. It's driven by the never-to-be-removed barrel hinge.

Reassembly Tips If the rifle is equipped with a swinging locking bolt, install it and its pin. If it has a one-piece locking bolt with yoke attached, slip that back into the receiver.

Install the trigger, trigger spring, and trigger pin. Place the hammer into its slot, pull the trigger at the same time to hold the hammer in its forward position, and insert the hammer pin. Place the top lever in the receiver, slide the lever-plunger spring on the lever plunger, and engage the plunger with the top-lever sleeve.

Turn the receiver upside down so it rests on the top lever, and seat the plunger spring into its hole at the rear of the tang. Lift the top-lever sleeve onto the lever stem. To gain full engagement between the two it may be necessary to tap the sleeve downward on the lever stem due to a tight friction fit at the factory. Reinstall the top-lever screw to hold together what you've done so far. Examine the safety closely. On the schematic, there appears to be a Figure-8 near its right end.

This is part of the safety's detent system and it must face the receiver hole for parts #31, 32 and 33. These are reinstalled next, and the safety screen screwed in to a point where the safety snaps positively but smoothly between the on and off positions. You've previously noted the bend in the locking-bolt plunger. Orient the plunger in that position, place the spring on the plunger and the back end of the plunger in its seating hole at the rear of the tang.

There's a point on the conical front end of the plunger. It's supposed to meet up with a dimple or shallow recess at the back of the yoke. Compress the spring to the rear with your fingers enough to start the end of the plunger



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The extractor lever (B) is held in its barrel-lug slot by two pan-head screws and a retainer. The lever activates the extractor and is driven by the barrel hinge. In toward the recess, then tap the cone along the yoke until the recess and plunger point are fully engaged. Work the top lever back and forth to check for any rough spots. The yoke should move freely forward until it is brought to a stop by the top-lever sleeve.

The total movement will far exceed that required to lock the action and is called “take up.” This allows and ensures lockup in case of some lug wear. When that wear has reached an extreme, lockup will be loose or won’t happen at all. On a Savage Arms, Inc. produced Model 24, a gun suffering this condition can be returned to the factory to refit the barrel and locking-bolt lugs.

On a Model 24 predating the current manufacturer, you can machine a piece of metal to fit and silver-solder it to the bottom, tapered locking seat on the barrel lugs. Great care is required with the soldering since the lug itself is silver-soldered to the barrel. If you ever have to undertake this repair, remember that the angle of the locking seat is critical, doubly so on centerfire models. That the angle is maintained is imperative.

The mainspring, its plunger, and its spring are easier to install if you lay the tang portion of the receiver on your bench and press it up against an immovable object with your belt line to keep it from squirming around. Here again, you should have a picture burned in to your brain of how the notched end of the plunger fit against the hammer when you first pulled off the stock. Just in case you don’t, the upper or longer portion of the notch engages the hammer.

Place the plunger spring on the stem and start the seat on the stem. Press the muzzle end of the plunger up against the hammer, hold the rest of the mainspring assembly together, then strike the seat rearward and downward to abut its tang hole. With the seat trapped against the tang, you can let go of the mainspring assembly and use a punch to nudge the seat into the hole. This will no doubt raise a burr that will make cocking the hammer hard or very rough the first time after the gun is reassembled.

Don’t fret; a few more cocking actions will probably smooth out the bump. Conclusion If there’s a hard and fast rule with the Model 24, it’s the same one that should be followed when working with any firearm: Study the way things fit together as you work your way in, and you won’t have a whole lot of trouble re-installing the parts as you work your way out. ■

PISTOLS

Big-Boy Caliber Conversions: The .400 Cor Bon and .460 Rowland

Conversion of the M1911 to these interesting calibers is simple, relatively speaking, with these custom “drop-in” barrels.

BY ROBERT K. CAMPBELL NOVEMBER 2005

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When it comes to versatility, flexibility, and overall usefulness, there are few pistols that can equal the M1911 semi-auto. The design has been around for over 90 years, yet remains at the top of the heap for experimentation and customizing. I sometimes wonder how much farther we can stretch the envelope, but when I see single-shot conversions firing rifle calibers and red-dot sights mounted on the 1911, I realize we haven't even begun to approach the limitations.

I have extensive experience with the 1911 in the more popular calibers, 9mm, .38 Super, 10mm, and .45 ACP. I have some experience with the .40 caliber, and considerable experience with .22-caliber conversion units. I've recently become familiar with two more fascinating calibers available for the handy gunsmith, the .400 Cor Bon and the .460 Rowland. These rounds differ from each other, but the basics of fitting each gun properly are the same.

As for power, the .400 Cor Bon is in the 10mm class, while the .460 Rowland is in the .44 Magnum class—a very powerful cartridge. Often, the conversion goes smoothly, but hang-ups are to be expected. Let's take a look at each caliber and my experience with various conversions. First, there

is rarely any such thing as a “drop-in” part. As we know, slides don't fit every 1911 frame, and even .22-caliber conversion units aren't a perfect fit on any old 1911 carcass.

As I've discovered when fitting mag wells: All guns are not created equal. We have to err on the side of oversize, because we can't peen that Smith & Alexander mag well up to fit a pistol, but we can file the frame or the mag well down. But “drop-in” conversions should go better, shouldn't they? We'll see. The .400 Cor Bon Conversion With the .400 Cor Bon, all that's needed to convert the pistol is a barrel.

The one I used was made by Kart Precision Barrel and available from Brownells. The .400 Cor Bon is a .45 ACP cartridge case necked down to .40 caliber. There is no difference in the cartridge case rim, so the breechface need not be modified. Barrels are offered in “drop-in” or “gunsmith” fit. The .400 Cor Bon is a hot number, jolting a 135-grain bullet to well over 1,400 fps. This brings considerable momentum to the 1911 slide in comparison to the sedate .45 ACP.

Experienced gunsmiths may remember the .41 Avenger, a .45 ACP case necked down to .41 cal. The .400 Cor Bon is similar, but

with a different shoulder, and is much more successful, regardless of the relative merits of the cartridge. When installing the appropriate barrel and expecting perfect function, we are sometimes disappointed. We can have a too-short link that allows the slide to unlock a little early, and the velocity of ejected brass can be excessive.

I have found .290 links usually appropriate for those pistols closest to the Colt 1911 template. Along ejector will most often throw cases out early and damage them. I would not simply fit one out of hand. I've found that the standard ejector works fine with the .400 Cor Bon. When the standard part works, it's all to the good. There is so much to consider in reliability. With the barrel, link, frame, and slide fitted and working in conjunction closely, we have to carefully consider the whole situation.

Slide velocity is increased by a hot round like the .400 Cor Bon. When the slide recoils and returns to battery, with the cartridge pickup rail coming forward to pick up a cartridge, if the cartridge has not yet risen in the magazine we can have a 400 Cor Bon on the left compared to the 10mm cartridge on the right. 460 Rowland. To the immediate left is the .45 Super.

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460 Rowland (top) features a nonremovable compensator. Note the deeper chamber compared to the 1911 barrel (bottom). The 460 Rowland barrel fits and functions perfectly in 1911 types, misfeed or tie-up. Or the slide may skip over the cartridge. What we have to do is carefully evaluate the strength of both the recoil spring and the magazine spring. The recoil spring is the first problem. Usually, 18.5-pound springs work fine in the .400 Cor Bon.

However, I worked with one pistol that just didn't seem to work well with any loading, and .400 Cor Bon ammunition is a little expensive for experimentation. I used a Sprinco recoil-reducing full-length guide rod in this pistol. The secondary or sub-spring assembly inside the stainless-steel guide rod does the business coupled with a WC Wolff premium mainspring, and I have enjoyed excellent function in this Government Model. But that was not all that was required to manage the .400 Cor Bon.

When the pistol was in full recoil, I found that sometimes the nose of the cartridge took a dive out of the ejection port. At other times, the slide would ride over the cartridge and not chamber it. I was using stock Colt magazines, but the problem was evident with practically any magazine I tried. I took a Chip Mc Cormack magazine and fitted it with 11-pound WC Wolff magazine springs. Few of us pay attention to spring rates in magazines, but this was a learning experience.

These magazine springs fight the tendency of the slide to outrun the magazine when hotter cartridges or even +P loads are used in the firearm. I've had normally reliable

handguns becoming unreliable when subjected to +P+ use. With a heavy recoil spring and matching magazine spring, we have the right combination. The combination I settled on was a Wolff recoil spring of 18.5 pounds and a Wolff magazine spring of 11 pounds.

Still another modification needed to ensure reliability in this weapon was to tweak the feed lips of the magazine. As most of us know, the Wilson Combat magazines feed the cartridge directly into the chamber, more so than earlier styles that usually bounced hardball rounds straight into the feed ramp. Observe a loaded magazine of either type by inserting it into a 1911 frame with no upper assembly mounted. The difference is striking. The other types often butt the bullet across the feed ramp and into the chamber.

This is okay with hardball ammunition, but not with a soft nose hollowpoint. With a properly tweaked magazine and a bit of attention to detail, the bottle-necked .400 Cor Bon will give excellent feed reliability. I find that by opening the last 1/8 inch or so of the magazine carefully, the cartridge is released earlier. This allows the cartridge to pop up early—but not too early—and feed directly into the chamber.

Much of what is done in altering magazine feed lips is by trial and error, with painstakingly small steps. I've used several .400 Cor Bon pistols, and the Sprinco-fitted pistol was easily the most reliable. This was after fitting a Sprinco recoil guide, Wolff 18.5-pound recoil spring, an 11-pound Wolff magazine spring, and gently opening the feed lips. If you are going to work with the

.400 Cor Bon to any extent, a set of Dillon loading dies will allow you to build affordable ammunition.

The dies are more expensive than comparable loading dies due to the extra effort in building bottle-neck loading dies, but well worth the cost if you choose to experiment with this interesting caliber. Starline offers brass cases, so we do not have to fire expensive factory ammunition to get started. Most .400 Cor Bon conversions proceed flawlessly without any type of problem.

A reader wrote in and asked why I didn't mention modifying the magazine after I first published an article on the .400 Cor Bon some years ago. I answered that I had not had to work with my magazines. At a later date, I did run into trouble with another handgun. The high-capacity Para-Ordnance, for example, will seldom give any type of trouble due to an excellent magazine design. Finally, never use the .400 Cor Bon in an older spot-heat-treated handgun.

And I certainly would not use it in an inexpensive handgun, or one of suspect origin. The .460 Rowland Conversion Johnny Rowland, the star of a popular outdoors show, invented this cartridge. Much of the credit for the final development goes to Clark Custom Guns. This is a semi-auto cartridge with real power, comparable to any load in a four-inch-barrel .44 Magnum. Yet, with proper technique and equipment, the wear, tear, and recoil of the combination is manageable.

Let caution be your guide in loading for this cartridge, as the parameters are experimental.

BIG-BOY CALIBER CONVERSIONS: THE .400 COR BON AND .460 ROWLAND CONTINUED

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Still, with concentration and effort, it can be done quickly. 460 Rowland cartridge. It's tightly fitted to the slide; don't get your fingers between the slide and compensator during assembly. For safety, the .460 Rowland uses a cartridge case that is .957-inch long versus the nominal .900-inch .45 ACP case. This prevents the .460 Rowland from chambering in a .45 ACP barrel, and also allows the energy of powder combustion to be spread over a larger area. I use Hornady Custom .45 ACP dies in loading the Rowland.

With proper adjustment, they work fine. The .460 feeds in .45 ACP magazines because the overall length of the cartridge is the same as the .45 ACP; bullets are simply seated deeply in the case. The .460 will not chamber in the .45 ACP, and this sets the gun apart from the .45 Super. The Clark Custom .460 Rowland conversion comes with a compensated barrel, 24.5-pound Wolff recoil spring, and a full-length guide rod. Installation is straightforward, but attention to detail is demanded.

Since we're working with heavily compressed springs, wear safety glasses when dealing with this conversion. The installation steps are as follows: Strip the slide from the frame and disassemble the slide. The barrel, barrel bushing, recoil spring, and spring guide and plug are removed. Now, place the .460 Rowland barrel into the slide. Next, place the new front-spring retainer or plug into position.

Carefully examine the recoil guide and place the buffer end of the twopiece guide rod into the smaller end of the recoil-spring plug. The plug should already be in place in the end of the slide. Now, with the slide firmly in hand, compress the recoil spring by pushing the spring guide and spring into the slide. The cutout portion of the buffer end of the spring guide should be towards the barrel.

Compress the spring until the buffer end of the guide is past the barrel link, and hold it firmly against the underside of the barrel with one thumb. Next, place the slide on the frame far enough to capture the recoil spring, and continue moving the slide to the rear of the frame until the slide stop can be inserted. Rack the slide completely to the rear and lock it in place. Now, install the front half of the full-length guide rod and lock it firmly in place with the supplied Allen wrench.

The slide should never be allowed to run forward by releasing the slide lock; due to the heavy spring, ease the slide forward to avoid the risk of excessive battering. Clark recommends installation of a heavy-duty firing pin to prevent slam fires. This was accomplished quickly and easily by dropping the firing pin stop and installing the spring. Johnny Rowland and Jim Clark are to be commended for clear, easily followed instructions. I took no special precautions in readying the handgun for its first shots.

I liberally doused the long bearing surfaces of the pistol with Birchwood Casey gun oil and loaded my magazines with .460

Rowland ammunition from the sole supplier, Georgia Arms. This is top-quality ammunition that always performs well in any caliber. As I always do in a function test, I readied myself with adequate ear and eye protection. Function was fine, and I have to admit that recoil was not as wild as I had presumed.

Firing offhand, the recoil of the "defense" load, a 185-grain JHP at 1,400 fps, was in hard-ball territory. The 1,550-fps 185-grain load recoiled in .45 +P territory. As anyone who shoots competition realizes, an efficient compensator really does the business. There were no problems in this conversion, so I have no fixes to report. However, I started with a quality gun. I've used the .460 conversion in both Springfield and High Standard pistols with excellent results.

Starting with a poor quality gun might have brought problems related to the gun. At this point, I've put about 300 trouble-free rounds through the conversion. With full-power .460 Rowland loads using 230-grain bullets, recoil is comparable to the .45 Super, but in the .44 Magnum class. Overall, this is a conversion that works smoothly. Still, if any problems are encountered, I think that the measures outlined above in dealing with the .400 Cor Bon would solve them.

These are both interesting and effective calibers that are sure to become more popular with time. Be prepared, and remember each 1911 can be a case in itself. ■

MAINTENANCE & REPAIR

Basic Repairs With Brownells Acraglas

Acraglas epoxy, once cured, produces a bond as strong as the original material itself. What's more, it can be shaped, dyed, and textured to match most wood and plastic surfaces.

BY DAVE STROM NOVEMBER 2005

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Some of my recent experience with Acraglas from Brownells I refinished a stock for my daughter Jessica. A few years ago, I had cut down a lightweight muzzleloading rifle to fit her, but after a few years she needed the stock restored to its original length of pull. Shaping the buttplate was not difficult, and most readers are likely to be familiar with this process.

The problem was that the plate was not made of solid plastic; it consists of several "cells" separated by ribs on the inside, with a stippled surface on the outside. In shaping the plate, the side became paper-thin in a couple of spots and broke through in another.

The fix was fairly straightforward. Dye it black and dab it on with a fingertip for a cheap, strong fix that matches the original surface well." The left end in the photo shows the repaired area filled with epoxy and fitted to the rifle. using Brownells Acraglas to fill the areas where the side was thin or missing.

The underside of the area to be filled was roughened with medium-grit sandpaper and degreased with rubbing alcohol. (A stronger solvent, such as acetone, might have melted the plastic.) Masking tape was placed on the side to act as a "dam" to hold the epoxy in place. resulted when I mixed the epoxy gel per the manufacturer's instructions and dyed it black. Filling the cell with the mixture is

simple, but be sure to work it in well to avoid any voids caused by large bubbles of air trapped in the epoxy.

Then it was set aside in a level place and given time to cure. After 24 hours, the tape was removed. Next, I used sandpaper on a wooden block to smooth the sides and to ensure that the back was flat. At this point, the buttplate fit very well. The only problem that remained was that the repaired surface, though well-fitting, was dull and smooth, and didn't match the "stippling" on the rest of the buttplate.

I considered simply painting the thing, but paint would only make it more obvious that the repaired surface didn't match the original (continued on page 21)

BASIC REPAIRS WITH BROWNELLS ACRAGLAS CONTINUED

ORIGINAL PAGE 21

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surface. The solution was to again mix up some Acraglas and dye it black. Then I dabbed it on the entire buttplate using a fingertip. (Wearing a disposable glove makes your cleanup considerably easier.) A little epoxy goes along way, so each time you dab your fingertip into the epoxy you want to lightly dab several places on the butt-plate. To make handling the piece easier, I slipped two machine screws into the holes in the buttplate and secured them with nuts.

Then I drilled two matching holes in a piece of scrap wood to make a "handle" to use while applying the epoxy and while waiting for it to cure. Going over the entire buttplate made sure that the surface matched and had equal "shine." The dried surface was "bumpy," and this blended very well into the original stippling. Any broken buttplate or plastic stock of this type should be repairable in a similar manner. As another example, I have an old Normark lock-back knife that has a grip made of plastic.

It has "cells and ribs" just like the plastic buttplate. It had given me over 20 years of good service before the handle broke. I really wanted to save this "old friend."

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Using a Dremel tool, I carved a slot in the cell that ran across the broken area. A small piece cut from a brass screw was fitted into this slot to act as a splint and add strength to the break.

After securing the handle to a piece of scrap wood, I placed a small amount of epoxy into the slot. The splint was put in the slot and the rest of the cell filled with epoxy. After the repair cured for 24 hours, only a small amount of fitting was needed to reassemble the knife. This repair has held up through a lot of hard use since then. Multiple camp chores, cleaning fish, and skinning a caribou in Newfoundland have proven the strength of the repair.

It should work equally well on any broken plastic part of this type. Using the epoxy that's probably already on your workbench, with the addition of the dyes made to color it to match, you can quickly tackle any number of plastic (or wood) repairs. And by the way, Jessica really enjoys shooting her muzzleloader, so I guess my customer is satisfied with the job. ■

PEOPLE & COMPANIES

Gunstock Checkering: Beyond the Basics

Once you understand the basics and have mastered the application of simple patterns, it's time to move ahead. Here, we'll cover some of the more advanced skills and more involved checkering patterns.

BY DENNIS A. WOOD NOVEMBER 2005

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In this article, I'll get into some of the aspects of checkering that look difficult to pull off. Once understood, however, most all of what appear to be intricate checkering patterns can be mastered with a bit of practice. Throughout this article, I've used W. E. Brownells full-view checkering tools for all line layout, spacing, and the pointing-up process. Some other tools will be mentioned at various points, along with the reasons why I've found these particular tools to E.

Brownell very versatile. work well for me. If you want to contact W. E. Brownell to get a price sheet, you can write to the company at

9390 Twin Mountain Circle, San Diego, CA 92126 or call them at Basic Equipment For the most part, my checkering is self-taught, so most of what I've learned did not come easily. A very big help was Monty Kennedy, through his book Checkering & Carving of Gunstocks. My first attempts at checkering were copies of patterns found in this book.

Of course, you could study this book until your eyeballs fall out, but your skills will never improve. Checkering is like anything else; you need to practice to develop your abilities. You also need to acquire some basic tools. I consider the following equipment to be the

minimum requirement for the type of checkering I do. First, we need to hold the stock in an adjustable fixture that will rotate the work fairly easily. This fixture must be held in a vise that is mounted as solidly as possible to an immobile base.

A light fixture with an articulating arm that can be aimed in a multitude of directions is another benefit. A comfortable chair, preferably one that has wheels, will save your neck and back. A quality

GUNSTOCK CHECKERING: BEYOND THE BASICS CONTINUED

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set of checkering tools will help to give you confidence, and a pair of magnifying glasses will alleviate eye strain and give you a clear view of what you're doing. I've tried just about every brand of checkering cutters available and, as I mentioned, I've found those sold through W. E. Brownell to suit my needs best. (A close second, in my opinion, are those sold by Gunline.) These cutters cut both in the forward and backward direction, left to right, right to left, and can be sharpened with a needle file.

They can also be reversed when the front half of the cutter has gotten too thin from sharpening. I prefer the handles sold through W. E. Brownell because of the bifurcated shank that holds the cutters. This shank allows the cutter to be adjusted into a position that allows me to get into some tight areas where a solid, non-adjustable, cutter head will not go.

The split shank also allows me to see where the back end of the cutter is, and that helps to prevent border nicks behind the cutter while starting anew row of spacing. The most important element involved with checkering is patience. A methodical, patient approach to checkering must be learned, because any job that is hurried is likely to show the effects of rushing, and reflect poorly on you. Getting Started I prefer to do checkering on a stock that has been sanded flat and has had all the pores filled with finish.

Trying to checker an unfinished stock will add another set of problems none of us need. It's much easier cutting through a hard, smooth, top surface, which reduces the tendency of the cutter to follow the open grain in some errant direction. After the checkering has been completed, it's a simple matter to brush finish into the pattern a couple of times and then brush/wipe away any runs. This is much easier than trying to finish and wet sand a stock that has already been checkered.

The type of wood used for the stock will pretty much dictate how many lines-per-inch (LPI) will be allowed and the angle of your finishing cutter. A good rule of thumb is the more open the pores of the stock are, the courser the checkering will need to be. Tightgrained wood such as maple or other types like California English, will take 24 to 26 lines per inch (LPI). Most of the American black walnut types require 18-22 LPI. Much of the checkering we see these days uses a diamond that has a 3-1/2 to 1 ratio.

What this means is that the diamond is 3-1/2 times longer than it is wide. Dem-Bart sells a die-cut plastic template having one end with the 3-1/2 to 1 ratio and the other with a 3 to 1 ratio. This template also has a guide covering 16 to 32 LPI spacing to measure either your cutter or line spacing. Measure the area you plan to checker. A

dressmaker's tape works well for wrapping around the forearm. Then transfer these dimensions onto graph paper.

Now you can doodle with the pattern until you get exactly what you want to see as the end result. Mark the centerline of where your pattern will be on the forearm. A Tel-emark white-lead pencil works well for this. Using your 3-1/2 to 1 template, lay out where your master lines will be. I poke a tiny dot at the tip of the template and each side on the stock with a sharp scribe, and then connect the dots using a 10-inch section of a broken tape measure.

The concave top surface of this piece of tape measure is covered with electricians tape to prevent any scratching of the stock surface so that it covers the markings used for measurement. There are basically two types of checkering pattern: one that is filled in after the borders have been outlined, and one where the end of the point pattern's outside edge creates the border. It's important to get your master lines absolutely straight as these lines will be the foundation from which all others are cut.

I use a 60-degree single-line cutter to cut in master lines, mainly because the line-spacing cutters are 60-degrees and spacing starts better when the spacing tool fits the master-line groove.

GUNSTOCK CHECKERING: BEYOND THE BASICS CONTINUED

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Finishing, or single-line cutters are available in 60-, 75-, and 90-degree included cutting angles. For the more open-pore woods, the 90-degree single-line cutter is recommended, because it creates a wider base for the diamonds, and with the open grain of these types there is likelihood of the diamond breaking away.

When working on a checkering pattern for some of the harder stock woods like California English, the 75-degree single-line cutter will give a deeper look to your diamonds, and because the wood is denser there is less chance of the base of a diamond breaking away. I only use the 60-degree cutter for laying out master lines. If this angle were to be used for finishing up the checkering, it would create a very small base for the diamonds and it's very likely the diamonds would break off.

Veining cutters or V-gouges are handy when doing the final blend of your border edges. Most common are those with 60- and 90-degree included angles. I've looked for a 75-degree V-gouge, but as yet haven't located one. I find that those sold by Dem-Bart are easy to work with, and maintain a sharp edge for quite awhile. A stiff-bristle toothbrush is also helpful. It will get what seems to be an amazing amount of wood dust out of your raw checkering so you can see the diamonds form clearly.

Ribbons, Skip-Line, and Borders A very attractive addition to any checkering pattern involves ribbons, as long as the ribbons are parallel. Ribbon width is strictly a personal preference, up to a point. To keep the look of the checkering in perspective, a ribbon should be no more than the width of two lines of diamonds. To keep the outside edges

of the ribbon parallel to itself and the spaced lines in the pattern, a skip-line cutter will be the tool of choice.

You can determine how wide you want to make the ribbon by looking at the little chart depicting the finished distance at the top of the diamonds, according to the LPI you will be cutting. Keep in mind that if the ribbon looks too wide, it may appear that the ribbon is actually a wide border between sections of checkering. One type of pattern that is not used very often these days is the skip-line or French style. At one time, this pattern was very popular on Weatherby rifles.

To me, this pattern looks very appropriate, especially on shotguns. This style of checkering requires that you pay close attention to what you're doing. You not only need to

GUNSTOCK CHECKERING: BEYOND THE BASICS CONTINUED

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watch how your pattern end points are forming, but you need to count the number of lines being cut so you know when to switch cutters. It's important to watch and count those lines or the pattern symmetry will be thrown off if there is an extra line cut or if one is omitted. Here again, the style of Frenchcut checkering is purely personal. Whether you space three, four, or five lines before you skip one or two is up to the eye of the beholder.

Most often, you will see this pattern with four to six lines cut, and then the two-line skip cutter is used. For this style of pattern, I use the short corner skip-line cutter for a couple of reasons. This short cutter is handy in tight areas, and because the cutter doesn't get used very often it will last through quite a few jobs of this type. Those Pesky Flowers Any pattern that involves a fleur-de-lis is a fill-in pattern for the most part.

The border is cut and the flow ers are outlined, then master lines are established inside the outlined borders. Patterns involving the fleur-de-lis were always tough for me. Everything I've read concerning this style of pattern involved various chisels that were used to cut the outline of the flowers, but specific radii were infrequently mentioned, if at all.

Quite a few years ago there was a set of plastic, die-cut, fleur-delis templates from Phil Pilkington, a custom stock maker, that were available through Brownells. There were five different styles of fleurs included in this package, but I don't see these in the catalog any longer. If you are interested in acquiring this set, you may want to contact Phil at The Pilkington Gun Company Muskogee, OK 74402) to see if he still offers them. I now use these templates when laying out a pattern on paper.

Once I have the pattern drawn out on the graph paper, I'll run it through an ink-jet printer and copy it onto those thin sheets of plastic that "bean counters" use for charts that they can show on an over-head projector. If you've made your measurements correctly, you should be able to cut out this pattern and tape it to the stock with cellophane tape in the location you want it.

Using a set of magnifying glasses and a fine-pointed scribe, just poke a series of tiny holes through the plastic pattern, all around the fleurs and any radii involved. When laying out curved border edges on graph paper the "French curve" is a tremendous aid. These plastic templates are available in most any curved shape you can imagine and incorporate as apart of your checkering pattern.

With the availability of versatile scanner/printers these days at a relatively moderate cost, you can replicate just about anything you find in a book. Patterns found in Mr. Kennedy's book can be reproduced, along with the individual fleurs from any specific pattern, sized to your needs and then printed onto a 10-mil clear plastic sheet. The half-diamond pattern included in this article is intended to be reproduced on these clear plastic sheets.

Use a straight edge and a razor knife to trim along the outside edges, and you have a relatively cheap template. Conclusions We've only scratched the surface of what can be done with some imagination and a set of checkering tools. The most important component involved with any checkering pattern is the person doing the checkering. I can only point you in some of the directions that I've found to work. A complete set of instructions on how checkering is or should be done doesn't exist and probably never will.

If you seriously take up the artistic challenge of learning how to checker, no doubt you will come up with better ways of doing things. If you do find some twist that makes hand-cut checkering an easier task, please share it with us. As the man said, "some old dogs can learn new tricks." ■

PEOPLE & COMPANIES

Simple Action Work On the Browning Hi-Power

Opinions differ as to which was John Browning's best pistol design. The fact remains, however, that the Hi-Power is a great all-around pistol, and one that can be improved greatly with a small amount of attention.

BY ROBERT K. CAMPBELL NOVEMBER 2005

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For many years, I regarded the Browning Hi-Power as a more complicated handgun than the Colt 1911 and avoided working on the pistol. As it turned out, most of what I thought to be fact was simply myth. The Hi-Power is little if any more complicated than the Colt 1911, and much of the basics I've learned in working with the Colt pistol served me well in exploring the Hi-Power.

There are several generations of the Hi-Power and more than a few clones and copies, but these instructions have proven accurate for each and every Hi-Power I've worked with. The pistols are true classics, well designed and often beautifully executed. Like many other-wise good pistols designed in the previous century, it has certain points that can be improved. The trigger action is often heavy and can be improved considerably by careful hand work.

The need to feed modern hollow point ammunition should also be addressed. Modern pistols are very good in this regard, but quite a few vintage guns feed nothing but ball ammunition. And there are the occasional troubles associated with long wear and hard use. Basic Upgrades Be certain the pistol is cleared of any ammunition and remove the magazine. Pull the slide to the

rear and move the safety into the second notch in the slide. This will secure the slide. Pull out the slide lock from right to left.

When the safety is released from the second notch in the slide, the slide will run forward off of the frame. Move the safety lock to the fire position. You can now push the sear pin out from right to left. The ejector will then pivot down. With the ejector in the downward position, the safety can be pressed out. If you want to fit the extended safety from Cylinder & Slide Inc. now is the time.

Many like the looks and feel of this safety better than the modern extended Browning type, and, in my opinion, it is a must-have on older handguns. Next, the magazine catch is removed. Hold the catch in and use a small This gun is true to the Browning template; if you can work with the Browning, the FM presents no problems. screwdriver (I use the Chapman tool) to turn the magazine-catch spring guide and lift the magazine catch, button, and unit out of the frame.

To address the trigger action, start by looking into the trigger assembly. Study the relation of the parts as they sit in the frame, then begin by pulling the trigger pin from right to left to remove it. I use a small punch



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and a minimal tap to begin the pin moving from the frame. Hold the pistol right-side up, and pull the trigger forward and upward. This allows the complete trigger assembly to come out of the gun intact. When you reassemble the pistol be certain the trigger pin is properly installed or you will have a walking trigger pin. The trigger pin can be reassembled backwards and the pistol will still function. See whether the groove in the pin is facing the muzzle or the butt.

The trigger-return spring fits into this groove; it's a simple matter to look into the frame and see if the part is assembled correctly. Cross pins in the trigger body hold the trigger spring and magazine safety. Be certain to get a good look at all of the trigger parts before taking the assembly apart.

When working with the Hi-Power trigger, it's important to be able to cut a flat surface with the honing stone. (See Chick Blood's article on "Target Triggers" in the September 05 issue.) The trigger and sear should be squared as much as possible. I use a Spyderco stone. This operation takes some skill, but with time and a few repetitions, you will be able to give the trigger a smooth let-off. During the work, I unfailingly replace the factory hammer spring with a W. C. Wolff spring.

Be certain to use the #26 spring, as this is the spring designed for duty use. You will probably also wish to replace the trigger spring with a Wolff spring. After taking the trigger assembly apart and taking a hard look at the pieces, arrange them in the order they fit together in the pistol. The hammer strut will usually be rough with sharp edges. Stone these parts for better fit and smoothness. The sharp edges should be rounded.

The face of the hammer notch should be polished, but easy does it here; it should be smooth, but the angles should remain unchanged. The full-cock notch of the hammer can be shortened—almost imperceptibly—by careful stoning. Moving to the sear, note the 90-degree angle of the sear. The sear should be polished to as near a glass-smooth surface as possible.

The engagement face of the lower edge of the sear is usually chamfered at this point, an overlooked part of the process that adds up to a pleasingly smooth overall action. The sear spring should be polished where it contacts the sear and on the surface that is the point of contact. The trigger bar should be addressed next. The trailing edge of the trigger bar rides in the frame. This point should be polished lightly, or until the tool marks often present are gone.

With this work done and the pistol reassembled, the trigger action is often notably improved. I lubricate all contact surfaces with Tetra Lube and allow for a short break-in period. An important step in achieving a truly good trigger let-off is to “marry” the magazine safety and the magazine. The trigger assembly must work on a tangent to accommodate the Hi-Power’s high-capacity magazines in such a compact grip, and often this will result in friction against the magazine.

The magazine must be carefully polished and some metal removed to prevent this problem—and this means every magazine that will be used with the piece if good function is to be maintained. This is a “cut and try” operation, proceeding slowly and trying the magazine frequently. I do not recommend the removal of the magazine safety. The magazine safety is designed to prevent the pistol from firing if the magazine is not completely inserted; it doesn’t matter if the magazine is loaded or not.

The magazine safety bar bears against the magazine itself, and this can result in a poor trigger action. Many shooters report that simply removing the magazine safety results in a better trigger action. I prefer to polish the bar that rides on the magazine and “mate” the bar and the individual magazines by careful honing. This is the difference between working with a custom gun and a personal-defense pistol. All safety devices should remain intact with a personal-defense pistol.

Sure, many pistols don’t have a magazine safety at all, but any handgun that was built with one as part of the design should retain that feature if the gun is destined for service use. That being said, removal of the magazine safety for personal use is fairly simple to accomplish. Remove the trigger pin from right to left, and take the gun down as normal. Push the magazine safety inward, then rotate the trigger down and out.

There is a small pin at the rear of the trigger that holds the safety plunger and spring in place. Drift this pin out and remove the magazine safety and plunger. It is unimportant whether the pin is replaced or not. I find the trigger is softer in initial take-up with the mag safety removed, but, again, I feel that a smoothed trigger with the magazine safety intact is still a better choice—and is certainly a better idea for the gunsmith from the liability standpoint.

FROM THE ORIGINAL PAGE

Throating for Hollowpoint Ammo Many Hi-Powers will effectively feed practically any bullet design, but not all of them will. My personal 1972 Hi-Power and every FM license-built clone I've owned feed the majority of modern ammunition without fail. But I occasionally run across a balky Browning. Sometimes the magazine is weak, allowing the bullet to take a

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SIMPLE ACTION WORK ON THE BROWNING HI-POWER CONTINUED

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This is a nice setup that makes the Hi-Power well suited for concealed carry. nose dive on the feed ramp. Just the same, standard technique calls for removing burrs and polishing the feed ramp mirror smooth. I once experienced an interesting malfunction of the Hi-Power that calls for logging into the “anything-can-happen” book. After a trigger job, I found that one of my original FN pistols would occasionally lock the safety in the down or off position and not return to the on or safe position.

After firing the gun a bit, the problem would go away until the next range session. I could not get the pistol to malfunction in this manner at home in dry fire. Eventually, I discovered the source of the problem. The trigger bears against a lever that presses the sear, which strikes the hammer’s full-cock notch, dropping the hammer. The safety moves into position to stop all of this from happening.

The safety cannot bear against the pressure of an out-of-spec sear or one that is not properly engaging.

I stripped the handgun and found not only a raised burr I had missed but several pieces of shaved brass from some of the ammunition I’d been firing. Cleaning and polishing was the answer. I don’t know how common this malfunction might be, but it has not reoccurred with this pistol. Parts Interchangeability On several occasions, I’ve fitted Cylinder & Slide Inc. triggers on FM clones, and worked with several FEG type Hi-Power clones. I have also done an action job on the Arcus pistol.

Overall, the principles and procedures are the same, but the parts are not interchangeable. The FM is a license-built clone and I have enjoyed excellent luck with these pistols. The parts are usually high quality internally, and the handguns take to improvements well. The Arcus parts seem harder than those of

the FM, and more difficult to work with, but mine was an early example and I must reserve comment with a single example in my experience.

The FEG pistols often require more time in fitting an extended safety or a barrel, as they are not quite as close to the FN guns as the FM clones are. Of the Hi-Power clones, I’ve found the FEG guns to be considerably rougher internally than the FMs. They are reliable, but require more fitting than the FM guns will. There is also a short-slide FEG known as the Detective version available from the Dealer Warehouse The FM pistols are offered from the factory in this configuration.

There is considerable It’s easier to work with than either the 1911 or the P-38, pistols that came along before and after the Hi-Power. Reassembly is not tricky, if you memorize the position of the internal parts before disassembly, but may require a few tries to master.

SIMPLE ACTION WORK ON THE BROWNING HI-POWER CONTINUED

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effort required in managing to make a short-slide version of any pistol work well, but the Detective comes off quite well. There are differences including a full-length recoil guide rather than the enclosed spring of the standard Browning, which is retained in the full-length FM guns. Among the differences in the short FM is that the ejector is taller than on the early production Brownings.

As a result, the Detective-version slide will fit early Browning pistols, but the longer Browning slide will not fit an FM Detective because the ejector is taller on the FM pistol. This is no drawback, as few shooters will wish to do this sort of switch, but quite a few shooters may wish to put a short slide on the older Browning. This switch instantly produces a shorter, more compact

carry gun, with excellent high-visibility sights and a barrel that is usually throated for hollowpoint ammunition.

I've had no problems at all with this setup on my older Hi-Powers. Conclusions The Browning Hi-Power is sometimes referred to as John Moses Browning's second-best pistol—or his best pistol, depending upon which side of the fence you're on and how great an affection you have for Browning's Colt 1911. Personally, I enjoy working with both handguns very much and find the Hi-Power to be a serviceable and capable handgun.

In my estimation, the Hi-Power is an easier gun to work with than the 1911, and a fine all-around pistol that can be improved greatly with a small amount of attention. ■

RESTORATION

Reader Forum

BY AMERICAN GUNSMITH EDITORS NOVEMBER 2005

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Restoration and Refinishing Feedback I've been meaning to tell you that since joining The American Gunsmithing Association I have been looking through old issues for the perfect "restoration" article. I have now found it, thanks to you! Please pass on to Bill Larson my thanks! His article "Gunstock Restoration and Refinishing" in the August 2005 issue is the most complete, detailed, and "loving" article I have ever read! The best word to describe it is perfect! As a fellow Scandinavian would say, mange tusund takk!

A thousand thanks! David A. Jarratt Newton, Massachusetts I just finished the August issue of American Gunsmith and was very impressed with Bill Larson's article "Gunstock Restoration and Refinishing." The man has a command of the English language seldom found in articles published by gun magazines. I like the idea that he proofreads his material before releasing it.

Please encourage him to write on some related subjects: installing butt pads, glass bedding, the finer points of inletting, and bedding synthetic stocks. You might even consider giving him a bonus for his August article. Can you ask him what is his opinion of the commercial product "Lin Speed" as a stock finish. Two stocks I refinished with Lin Speed in the 1950s as a teenager are still in very good condition. Larry Collins Escondido, California Thanks, David and Larry.

Your faithful editor will take a little of the credit for the language and proofreading, but will let Bill Larson respond to the question about Lin Speed. Bill Larson responds: I have used Lin Speed to finish some gunstocks. I find it easy to use and also easy to

repair. I find it very suitable for reconditioned military-rifle stocks. Like other boiled or refined linseed-oil finishes, it contains dryers to accelerate oxidation or dry times.

I would suggest purchasing Lin Speed in small quantities—only enough to complete the job at hand. Once opened, any lengthy storage periods will thicken or degrade the oil. Follow the manufacturer's instructions closely. Pour a small amount on a folded aluminum-foil patch, enough for a single application and immediately close the original container. Another tip I could suggest is, as the container of finish is used, drop a few clean marbles, ball bearings, or even clean pebbles into the container.

This practice will raise the liquid level to the top of the container and displace the air which will help the product last longer. Be sure anything you drop in the container is clean or washed in mineral spirits so it will not contaminate the product. Two Questions I have a couple of guns I'm working on that I hope you can help me with. Number 1 is an 1894 Springfield rifle in 30/40 Krag that I need to put a scope on. What's the best mount to use to get a strong stable base?

The other gun I have is a 12-gauge auto shotgun that I need a link fork and gas rings for. The problem is the only name on the gun is "made by Addis for Kassnar Imports." Do you know who made this gun and a source for parts? Any info you give me would be greatly appreciated. Dave Sounds to us like you have a Krag/Jorgensen made by the old Springfield Armory between 1892 and 1899. A one-piece base spanning both ways beyond the bolt opening in the receiver would serve well.

A blank base stock is available from Brownells. You'll have to cut, then contour it to fit the receiver, and drill it and the receiver for four mounting screws. Be certain the base will accommodate the chosen scope rings.

All base and ring screws should be secured with blue Lok Tite and the scope must be mounted high enough to clear the bolt handle. This will avoid the need for bending the handle downward. Kassnar imports no longer brings in the "Addis" shotgun. You might try contacting Jim Heverling at KBI, Inc., Harrisburg, PA 17112). He may be able to steer you to a parts source. Weatherby Trigger I have a question about a trigger for a Weatherby Mark 5.

My cousin had rechambered my 300 WBY to a 30- 378, and in the process had broken the trigger about in half. I had a heck of a time just getting the gun back so I never said anything, but have tried trigger shoes without any luck. So my real question is: Can I get just the trigger from somebody, or is this a restricted item? Nobody seems to make an aftermarket assembly. I can replace the trigger myself as I've done enough of this on other rifles. Thank you for your time and cooperation.

I live in Alaska so maybe someone up here can help out instead of shipping it south. Thanks. Doug Maybe you can get through to Weatherby Customer Service Doug. We tried four times to check on trigger availability and got a recorded voice saying: "Sorry, your call did not go through." We heard the same recording when we called the main office number if they won't send you a replacement after you've spoken with a real human being, and you have both pieces of the broken trigger, there's

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(continued from previous page) probably a welding shop in your area that can TIG or MIG it together. Then you can smooth up the weld with fine files and stones, reinstall the trigger, and hopefully go on shooting without further irritation. High Standard Feeding Problems I have a .22-caliber Model 80 pistol which as you know was sold by Sears and made by High-Standard. The gun was purchased over 40 years ago by me and my dad as a birthday present to us both. I took title to it some years ago after Dad passed away.

Some years ago it began jamming frequently, at least once a magazine. It's gotten worse; since I got it, it jams almost every other shot. It will work fine ejecting by hand. You can empty the entire magazine with no problem. However, when firing, it jams almost every ejection. I have disassembled and vigorously cleaned it several times and tried anew slide spring with no success. I was next planning to rebuild the magazine and purchase anew spring and follower. However, I am having some difficulty installing them.

The magazine has a small button through the follower that allows you to draw down the follower to aid loading and also acts as the stop to keep the follower from coming out through the top of the magazine. I have not been able to remove it to replace the spring and follower. The new follower came without the button or the holding mechanism; it just has a hole for the button stem. Can you tell me how to take this out and replace the spring and follower in the magazine?

If you have any information on frequent causes of jamming in these pistols other than what I am trying, I would appreciate your advice. Also, do you have any back issue articles on this gun or similar High Standard pistols that may be of use. Thanks.

Andy Your Model 80 Higgins is a twin of the High Standard Model 101, also known as the "Sport King" and "Flite King." In his mini-bible on this H-S pistol and other models, author Burr Leyson described removal of the magazine button and we paraphrase his words here: Use a flat metal bar to depress the follower until the button is aligned with its rounded cutout in the magazine slot. Grab the button with smooth-jaw pliers and pull it out.

Ease off the pressure on the spring until the follower and spring can be lifted from the top of the magazine. The spring should be 15-1/2 coils in length. All H-S pistols were factory tested with a specific brand of ammunition to assure the cartridge was released by the magazine straight into the chamber. This avoids deforming or other damage and was/is one reason H-S pistols were known for their accuracy. We don't know the brand of ammo used in testing your pistol.

We do know it was not match-quality ammunition and we doubt the fodder you are now using is the same brand. Since .22 dimensions differ manufacturer to manufacturer, the ammo you're using could differ significantly from the original test cartridges, thus resulting in feeding problems.

If the bullet is hitting high on the chamber edge when it's released from the magazine, the rear lips must be tightened. If hitting low, the front lips are tightened.

These adjustments are to be made in very small increments with smooth-jaw parallel-opening pliers. Each bullet you charge into the magazine must be pristine. (Even better, coat each with Dy Kem to make spotting the location of any contact with the chamber edge easier.) You've already replaced the driving spring. A weak one is another cause for feeding problems, but you may need a fresh magazine spring as well. Also check the chamber edges for a burr and make sure your firing pin isn't sticking.

Le Fever Disassembly I own a Model 55318DS Le Fever Shotgun that I want to disassemble and am having difficulties with it. I need to get it apart in order to work on it. Can you supply any information on disassembling this gun? Richard Stein The Blue Book tells us Le Fever Arms was sold to Ithaca Gun Co. in 1916 and Le Fever shotguns were made under that arrangement until shortly after WWII.

We've been unable to locate disassembly instructions but did get an answer from the Le Fever Gun Co., formerly located in Le Center, New York. Now Giacomo Sporting, they no longer perform any mechanical work, only bluing/case hardening and wood refinishing. They were nice enough to suggest you contact the Alamo Gun Shop whose operator might be willing and able to help you. Good luck.

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