HANDGUNNER

THE AMERICAN HANDGUNNER

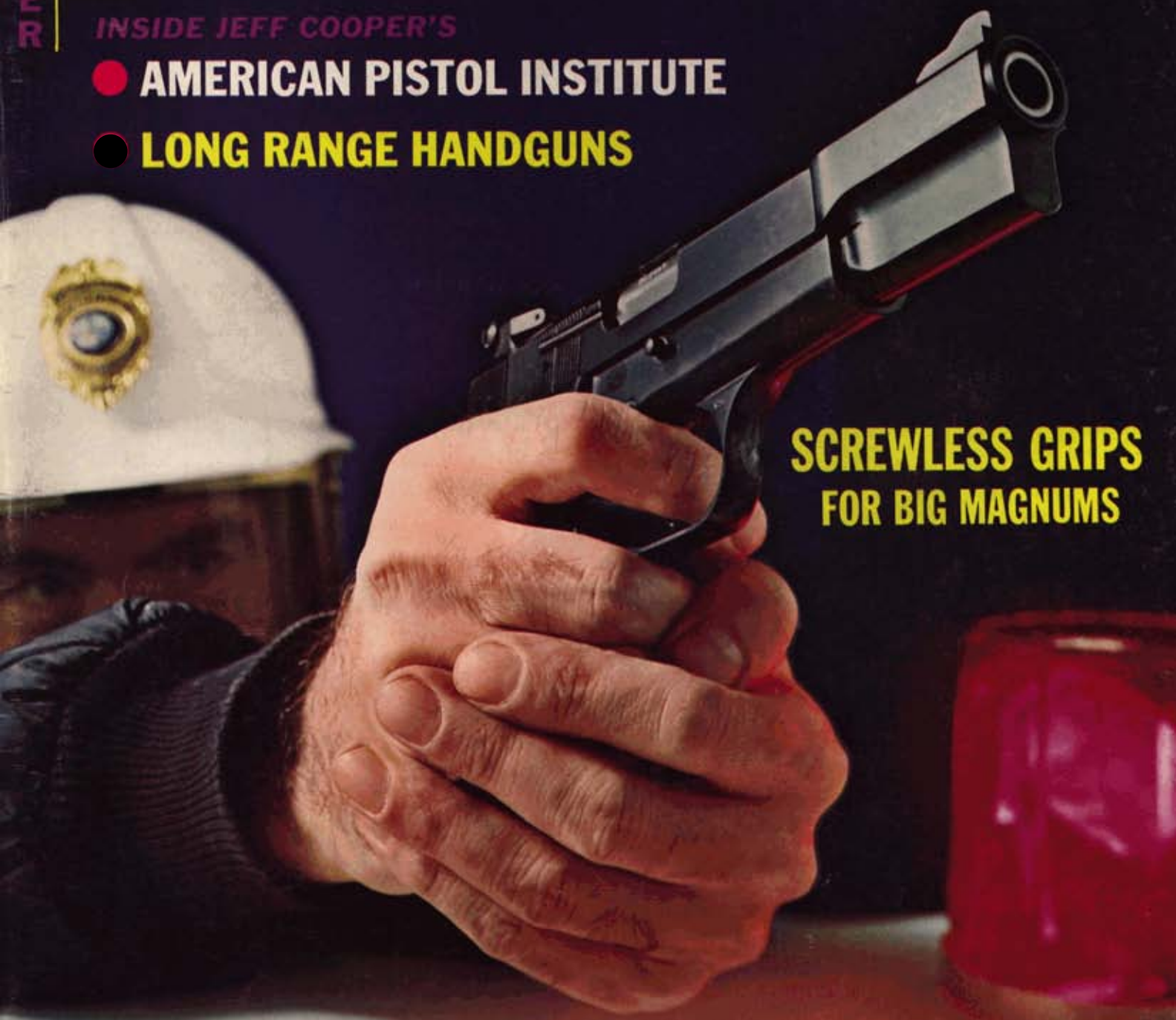
MARCH /APRIL 1977 $1.50

HANDGUN PROFILE IN DEPTH

- BROWNING'S BRAWNY HI-POWER

INSIDE JEFF COOPER'S

- AMERICAN PISTOL INSTITUTE
- LONG RANGE HANDGUNS



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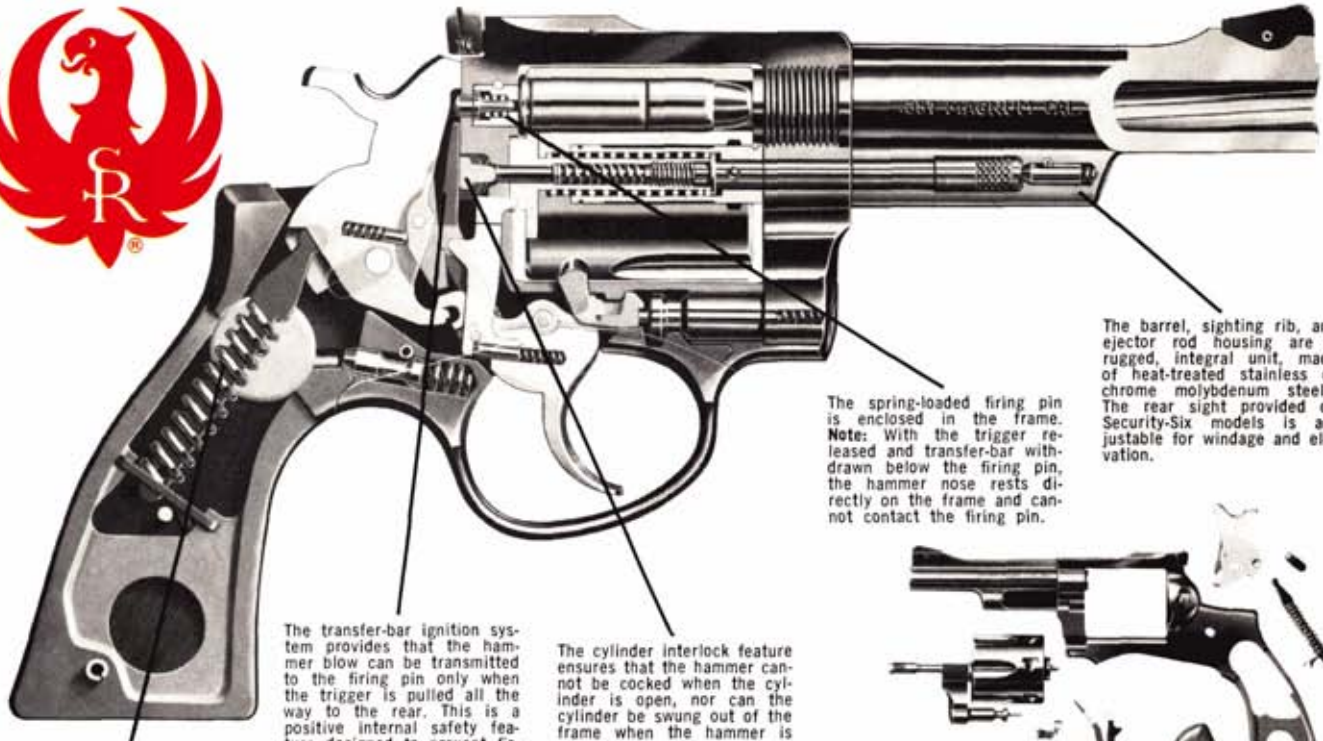

The barrel, sighting rib, and ejector rod housing are a rugged, integral unit, made of heat-treated stainless or chrome molybdenum steels. The rear sight provided on Security-Six models is adjustable for windage and elevation.

The spring-loaded firing pin is enclosed in the frame. **Note:** With the trigger released and transfer-bar withdrawn below the firing pin, the hammer nose rests directly on the frame and cannot contact the firing pin.

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Music wire or stainless steel coil springs are used throughout the Ruger double action revolvers.

FIELD STRIPPED VIEW

RUGER® Double Action Revolvers

These are the revolvers created by Ruger engineers who started with a fresh sheet of paper and an unlimited budget! There is nothing in the design of these Ruger double action revolvers which is there simply because "it has always been done that way"; nothing which reflects a commitment to outmoded production methods or obsolescent factory facilities. Representing a significant improvement in design, these revolvers incorporate creative Ruger engineering, sophisticated manufacturing techniques, and superior materials.

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The finest materials are used in Ruger double action revolvers. Music wire or stainless steel coil springs are used throughout and frames, cranes, cylinders, and barrels are of heat-treated stainless or chrome molybdenum steels. Most of the small internal parts of *all* models of Ruger double action revolvers are made of stainless steel.

In addition to traditional Ruger quality and dependable performance, the shooter enjoys the advantages of the durable stainless steel mechanism parts, even in standard blued models.

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Ruger Speed-Six Revolver with compact round butt in 357 Magnum, 38 Special, and 9 mm parabellum (blued model only) calibers with fixed sights. Choice of 2¾" or 4" barrel in blued finish or stainless steel.

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HANDGUN INDUSTRY INSIDER

GOOD NEWS & BAD NEWS FROM MANUFACTURERS

By MASSAD F. AYOOB

Things are in a state of flux at HIGH STANDARD these days. Management is trying desperately to move out of the old plant in Hamden, Connecticut, because H-S has reduced the scope of its gunmaking operations and the present facilities are too big for them.

High Standard once filled out a lot of their profits by making "trade-name" rifles and shotguns for Sears Roebuck, Montgomery Ward, et. al., but that's all done with.

Also done with, regretfully, is High Standard's line of shotguns and .22 rifles. The shotguns will be missed. The old Supermatic, the first of the gas-operated soft-kick auto shotguns, was a jewel to handle, even though a lot of people thought it was a trifle heavy, and looked like a pregnant Remington. Even more to be missed will be the Flite-King pump shotguns, with their super-slick slide actions and excellent triggers. The only long gun that will remain in the line for the time being will be the police riot gun versions of the Flite-King, prized by cops for their quick handling, easy takedown, and low maintenance requirements.

This will leave High Standard where it was years ago: a handgun manufacturer, pure and simple. No newies are coming out until next year, when the much-heralded Crusader DA revolver makes its debut in .45 Long Colt and .44 Magnum. An early Bicentennial production run is planned, however. . . .

COLT has good news and bad news for you. Bad news first: the excellent, classic line of Woodsman .22 auto pistols will be discontinued as of the first of '77. Factory spokesmen say it's so expensive to manufacture that it's costing them money to sell it. This seems to depend on who you talk to, and which balance sheet he's looking at. In break-even perspectives, one analysis shows that each Woodsman produced loses the company up to five per cent per gun. But another insider at Colt's calculates that considering variable costs, the profits could still be placed at 25% per Woodsman. But, be that as it may, Colt has made its decision. We have heard, however, that an East Coast entrepreneur who got wind of the Woodsman's impending demise has offered to buy the machinery from Colt's and produce the Woodsman pistols for them at his own plant. He figures his lower overhead will save money all around. And don't forget that potent Colt employees' union that has crippled the company more than once: they seem to be unahppy about the Woodsman phase-out . . .

Also on the scratch-off list are the Scout series of ¾ size single action .22s. Only marginally profitable, few shooters *or* Colt bosses will lament their passing. They were always only a shadow of the big Single Action Army . . .

On to better news from the Big C. The off-again, on-again Single Action Army is on-again, to appear around the first of the year in .357 Magnum and .45 Long Colt, and shortly thereafter in .44 Special. Colt considered chambering the venerable six-shooter for .44 Magnum with more seriousness than they had ever entertained that much-voiced idea in the past, but thumbs-downed it again. A company source confides, "We'll be lucky if we don't lose money on the SAA. We consider it our gift for 1977 to loyal Colt buyers."

Finally, there's a new Colt that hasn't quite foaled off the drawing board yet. It's gonna be a mid-frame .357 D.A., and while the company won't say so, we're convinced that it's designed to replace the Mark III series. The Mk. III guns were introduced a few years ago to challenge S&W's model 10 and 19 for police sales, and failed miserably, being less good and more expensive. Colt execs seem to think that the new gun will bring back the long-gone days when their fine Official Police .38s were carried by more than half of America's cops. . . .

INDIAN ARMS, producer of a stainless-steel copy of the Walther PPK .380 has, temporarily at least, suspended production . . .

An Air Force weapons specialist in charge of the Model 59 S&W evaluations for USAF, has found a way to accurize the model 59 and 39 9mm. autos. This is welcome news, since that kind of a revamp has stymied pistolsmiths for years, including those at the Springfield, Mass. factory. Special factory-turned barrels, that will probably be made available to the rest of us by S&W someday, are part of the secret. The rest is precision hard-chroming of certain key parts to tighten tolerances without sacrificing reliability

under the abusive conditions that military/police guns are designed for. Look for an in-depth study in these pages soon . . .

HARRY SANFORD, of Auto-Mag fame, has engineered an all-stainless-steel .45 auto. It comes with a Gold Cup-like "vent rib", and sights adjustable by Allen wrenches a' la' the Dan Wesson revolver. We'll be wringing that one out, too . . .

In the meantime, if y'all can't wait for a 100% stainless 1911, you might be satisfied by replacing all the springs in your current slabsider with non-tarnishing ones. J. W. Kay of J. W. Gunsmith Services, 1130 St. Christopher, Columbia MO. 05201 offers the whole kit to replace all 1911 springs for $25. All are built to standard Colt specs, save for the recoil spring, which is oversize to allow feverish handloaders to cut coils accordingly. He's also got a $3.00 recoil spring package for earlier Gold Cups, with their lighter slides, that he swears will act like a recoil buffer and prevent you from beating the gun to death no matter how much hardball you run through it. J. W. also does .45 Custom Combat conversions, and specializes in S&W wheelgun action jobs, one of which we plan to be testing before long . . .

In an earlier column, we mentioned that Lou Imperato of Iver Johnson is going to upgrade his revolver line beginning with a new swing-out .38, to appear shortly. We've just got done playing with a prototype, and were surprised to find that it really does have promise. The barrel resembles that of a Colt Diamondback, with ramp and underslung barrel weight; length will range from 2½ to 4". Call it a silk purse from a sow's ear, but they've got that Iver Johnson action slicked down *decent* in the prototypes, and quite controllable. It'll be a five-shooter with adjustable sights similar to those on the Charter, which is the gun I-J is going after market-wise. They'll try to equal it in quality, and then undersell it in the low $100+ range, retail. The production guns will have "gunfighter" style grips, an easy-to-see front sight like the one on the Ithaca 37 shotgun, and a modified action that doesn't leave anything hanging down into the trigger guard except the trigger. Cylinder opening arrangement will resemble the Charter Police Bulldog, except that it will have a working front lug in the barrel shroud . . .

Last message from COLT: the .357 Magnum Detective Special project has been kiboshed. After 2,000 magnum rounds, prototype guns were stretching in the frames and leaving the cylinders too loose to headspace, with weak primer hits and misfires resulting. The stress cracked at least one alloy Cobra frame, though there were no blowups. Guys in Colt's sales end said they'd be happy with a gun that'd last 2000 rounds, which the prototype DS's did, but the guys in Engineering and the ones who handle the product liability insurance held out for 10,000 which is going to be impossible in that size gun. Result: the Detective Special is still a thirty-eight after all these years, and will remain so.

NORTH AMERICAN ARMS is ecstatic at the response to their .22 LR version of their mini-revolver, hitherto offered in .22 Short only. It's 3⅞" overall, weighs 4½ oz., and throws hi-speed LR HPs at 800 FPS. .22 Mag was considered, but the larger head would have required a redesign of the whole gun. 20,000 of the wee wheelguns were sold last year, and the LR version should be a lot more popular.

Dave LaRue of North American tells me the next item in their line will be a .454 Magnum single action. Though it'll fire .45 Long Colt as well, the .454 loads will be the big news: a 230-gr. pill at 2000 FPS, and a 300 grain at 1600. Cost is as impressive as the ballistics, and we hope you read AMERICAN HANDGUNNER sitting down: the gun will go for $445, the ammo (also from North American) for $19. per box of 50.

THE PISTOLSMITH

By GEORGE C. NONTE

A SKIN-SAVING SPADE GRIP-SAFETY FOR 1911's AND COPIES

The first .45 auto I picked up and fired, some 35 years ago, chewed the hell out of my gun hand between the thumb and forefinger. I shot dozens—perhaps scores—of guns like it for the next 30 years, simply accepting a bloody and battered hand at the beginning of each season until a typical "Colt callous" had built up to help retain my vital body fluids where the hammer pinched the skin.

Somewhere along the way, I had seen a simple, grip-safety extension which carried back over the web between thumb and trigger finger to prevent the hammer from biting the hand that fired it. Somehow, though, I never got around to supplying myself with any such device. However, in more recent years, I have become more addicted to creature comforts and decided I didn't want to lose any more blood that way. You might feel the same way about it, and if so, for the relatively nominal investment of $7 to $10 you can purchase a "spade grip safety"—usually on an exchange basis—from one or more pistolsmiths. Those guys take the stock grip safety slot it and slightly reshape it at the upper tang, then silver-solder or weld in a ½" or so long extension, which is a bit wider than the body of the safety and which extends back over your hand, between it and the hammer spur. Then, when the slide drives the hammer back, there is no way at all that the tip of the spur can reach your tender skin.

All this is fine, and such a gadget on your .45 Colt or Llama is a good investment. On the other hand, if you're not terribly lazy and are reasonably handy with files and hacksaw, you can fit the same extension to your own grip safety in an hour or so some evening and thus employ your time far better and more economically than in watching the inevitably crude fare on the boob tube. Who knows, if your wife or mistress sees you thus productively employed and saving money, she might even quit griping about the time and money you spend on guns.

Begin by first holding the gun in your hand and very carefully observing the relationship of the grip-safety tang (where it sweeps back over your hand) and the tip of the hammer spur as the slide moves to the rear. Remember that during firing, the hammer spur actually moves back and down farther than you see it with the slide held back; it does this of its own inertia because it is driven back so rapidly. While you're doing this, have a helper measure back over your hand from the grip-safety tang to a point about 1/16" or more past the point where the hammer spur would contact the skin if allowed to do so. Next, from 1/16" to ⅛" steel stock, cut a piece ⅛" longer than the above dimension and about ⅝" wide; in fact, it seems a good idea to make it the same width as the

pistol frame. This might look a little odd, but it will be relatively easy to narrow it down a bit after the extension is fitted, if you like.

There's probably three or four ways this extension could be attached to the grip-safety tang, but if you're using 1/8" thick steel, the best I've found is to move in on the underside of the tang 1/8" from the tip and file a notch there—from the under-

side—deep enough to accept the extension and to hold the extension in a prolongation of the line of the underside of the tang. With the notch finished, carefully file the center portion of one edge of the extension to a close, even fit in the notch.

Epoxy or "hot stuff" the extension centrally into the notch and reassemble the grip safety to the frame. Try it for feel. If you've thick, pudgy hands, the extension might cramp you a bit, in which case you can change the angle of the notch to rotate it upward a bit; on the other hand, if you've skinny hands, you might find it worthwhile to angle the extension downward a bit more by the same means. While you have the safety assembled to the gun, check to make certain that when the hammer is as far rearward as it can possibly go, its spur does not stike the safety extension. If it does, the simplest way to cure the problem is to grind a small amount from the hammer spur to provide clearance. If you set the extension at much of an upward angle, though, you may be forced to cut at least a little bit off the hammer spur.

Once all those things are settled, remove the safety, and break the adhesive bond by heat. Scrape all adhesive residue from the joint surfaces and prepare for soldering.

Incidentally, if you envision problems in holding the extension snugly in place while soldering, back up one step, and while the two parts are still epoxied together, drill a 1/16" hole more or less vertically from the underside through the extension and into—but not through—the overhanging, upper portion of the safety tang. This will allow pinning the two parts together for soldering, and the pin will actually add a bit of strength to the joint.

Anyway, with the parts thoroughly cleaned, spread a thin layer of fusion silver-solder on all mating surfaces and position the extension in its notch. If you've drilled a pin hole, now, tap in a short length of 1/16" wire or rod to hold the two snugly together. Thus, pinned, fire up your propane torch, (two torches are better and quicker) and apply heat until you can see the solder liquify completely. Remove heat. If you're not using a pin, clamp the grip-safety tang uppermost in the vise, and position the extension in its notch. From a convenient support off to the side, lay a small-diameter bar or rod of metal across so that it rests upon the upper edge of the extension and thus holds it snugly in place. Apply the torch until the solder liquifies, remove heat, but do not remove the rod until you're certain the solder has hardened.

Now, wire-brush away the soldering residue, then carefully scrape away any surplus solder and/or heat scale that formed. Radius or bevel all edges of the extension, and smooth it up a bit.

Once the extension is firmly affixed to the grip safety and cleaned up, the basic job is done. However, for the sake of appearance and, perhaps, comfort as well, you may want to do a good bit more filing. At this point, the only thing you can't change while still retaining the function of the extension is the length and width necessary to place at least the rear tip of the extension between the hammer spur and your hand. Aside from that, you may make the extension round, oval, skinny,

fat; any shape you want. You can even drill a lightening hole through it, so long as that hole isn't big enough to allow the hammer and your skin to meet through it. Actually, the extension will also look better if it's reduced a bit in thickness and tapered smoothly toward the rear. When made from 1/8" stock, I prefer to taper the upper edge downward so that the extension is only about 1/32" thick at its rearward extremity. This makes a smooth, graceful shape, especially if the tapering is curved a bit and the underside is gently radiused to blend in. The one thing you

must not do is leave any sharp edges or corners on the extension. If you do, sooner or later recoil will catch you wrong and those edges will gouge a nice chunk from your hide. Wrap it all up by applying the finish of your choice to the altered safety.

Of course, it might be that your pet .45 auto is one whose complete originality and authenticity you wish to retain; a perfectly justifiable viewpoint. If that's the case, *don't* cut into the original grip safety. Instead, pick up another from one of the vendors of surplus parts, and modify it—keeping in mind that you want to make the extension so you will *not* have to trim the hammer. Then, for shooting, install the spare, modified grip safety and keep the original for re-installation when you want to restore the gun.

In any event, the use of a spade grip safety, which *you* can make will make shooting the .45 auto immeasurably more pleasant for a good many people. Without it, they bleed every time they go to the range.

GUNS and THE LAW

SMITH & WESSON SPEAKS OUT

The following is a statement by Smith & Wesson proposing federal handgun-owner licensing as a resolution to the gun control controversy.

There are many who, upon reading this statement, will feel that Smith & Wesson are selling us down the river; others may feel (as some have already told us) that this proposal could be the compromise that will effectively stop any legislation that would completely ban the ownership of handguns.

It would be foolhardy for us to think that we could comment on this proposal for all of our readers, therefore we would like your comments, pro and con. I'm sure that many will respond directly to Smith & Wesson, but we would like to hear from you, too.

WHY DOES SMITH & WESSON FAVOR HANDGUN-OWNER LICENSING?

One year ago in its 1975 Annual Report our parent company, Bangor Punta Corporation, announced that we favor federal legislation which would authorize the screening of every purchaser of a handgun so that law-abiding citizens could continue to freely purchase, possess, and use handguns for peaceful purposes and self protection and criminals could not.

Since then we have fought against a referendum proposal to ban private ownership of handguns in the State of Massachusetts — an issue which could have been on the November ballot in any of the twenty-three states which permit referendums initiated by voter petitions.

In the Massachusetts campaign we also publicly expressed our views that crimes committted with handguns could be reduced by a nationwide owner-licensing system that would sustain the right of law-abiding citizens to possess handguns while denying handguns to criminals and potentially violent people.

Few subjects arouse stronger emotions in this country than the issue of gun control. The debate has become intense. Both sides — those who firmly oppose any kind of legislation limiting the right to own firearms and those who believe we should live in a society devoid of firearms — have honest legitimate concerns. Both sides want something done about the problem of violent crime in this country.

Unfortunately the differences between the two sides have polarized them. Somehow a middle ground must be found that recognizes legitimate concerns and deals with the problem of gun misuse without violating the right of law-abiding citizens to own firearms.

It may be that no one solution will satisfy either the proponents or the opponents in this emotional debate. Yet because of Smith & Wesson's long experience in the firearms industry and its long association with law enforcement agencies we believe that we can and should make a contribution toward a constructive resolution of the gun control controversy in a way consistent with the public interest.

Our position on this issue is as follows:

1) **Handgun Owner Licensing**
We support a federally mandated but locally administered system of handgun owner licensing. Every responsible citizen would have a right to a license to purchase, possess and use handguns subject to local laws on "carrying" loaded firearms. Those determined to be irresponsible, such as convicted felons and adjudged mental incompetents, would be denied a license. That determination would be made by competent authorities with access to federal criminal records.
Those possessing handguns without a license would be subject to a mandatory prison sentence.

2) **Mandatory Sentences for Crimes with Firearms**
We believe that stricter enforcement of laws would help reduce crimes involving firearms. For this reason, we support federally mandated sentences for crimes committed with the aid of firearms of any type, with no plea bargaining and no parole.

3) **Handgun Owner Licensing vs. Handgun Registration**
There is a certain amount of confusion in the public mind over the difference between handgun owner licensing and handgun registration. We believe handgun owner licensing is an effective way of keeping handguns out of the hands of those who would misuse them, while handgun registration would simply create a cumbersome, expensive bureaucratic mechanism that would contribute little to solution of the problem of misuse.
For this reason, we support handgun owner licensing, and oppose handgun registration.

4) **Handgun Owner Licensing vs. Prohibition of Handguns**
As for prohibition of private possession of handguns, we believe it would be unconstitutional, unenforceable and totally ineffective in crime reduction. We agree with those hundreds of police organizations which feel such a ban would, in fact, be a setback for law enforcement.

Smith & Wesson is headquartered in Massachusetts, a state which requires owner licensing and imposes mandatory sentences for possession of firearms without a license. A study one year after mandatory sentencing went into effect found that use of firearms in aggravated assault cases had decreased significantly in the test areas while criminal assaults as a whole had increased. With the declining use of firearms in criminal assaults, the number of fatalities also decreased.

This indicates to us that there is a solution to criminal misuse of handguns which would not be cumbersome or repugnant to responsible citizens and would not infringe their civil rights. The solution is handgun owner licensing. We support that approach on the national level.

HANDGUN HUNTING

By GEORGE BREDSTEN

FACTS ABOUT THE AMERICAN BIG GAME HANDGUNNER'S ASSOCIATION

When queried as to the usefulness of handguns, most responsible persons are likely to view handguns suitable for competitive target shooting, SAFE plinking, some types of small game/varmint hunting, and under certain circumstances defensive combat shooting. Arguments ensue whenever someone claims the handgun to be an effective primary hunting arm for taking big game. Even among the more vociferous proponents of big game hunting with a handgun there is a difference of opinion as to how large a big game animal should be hunted with the handgun. Opponents contend that there isn't any handgun/cartridge combination adequate for taking big game. Objections are usually expressed in the form of allegations that handgun/cartridge combinations lack power, are intrinsically inaccurate, and due to high projectile trajectory can only be used at very close range. An objection made in conjunction with and to bolster the foregoing is that the "average" person can not develop the requisite degree of handgun marksmanship to be effective afield.

Even though it is often determined that opponents lack any big game handgun hunting experience or are members of the anti-gun/hunting element, the above objections appear plausible to the non-handgun hunter and are often accepted WITHOUT QUESTION as being true. It should be remembered that some of these non-handgun hunters are in positions where their decisions can and do determine what the handgun hunter can or can not hunt in a given area. As an example, consider the persons who establish State hunting regulations/rules. Many of these persons are active hunters using a rifle and/or shotgun, but very few are experienced or knowledgeable big game handgun hunters.

The result is obvious—disparity between the handgun hunting regulations/rules of the fifty States. When this was written, twenty-one States did not permit big game hunting with a handgun; twenty-eight States did permit some type of big game hunting with a handgun, and one State permits those persons having but one arm/hand to hunt big game with a handgun—yet prohibits those persons having normal anatomical configuration from using a handgun to hunt big game! When persons who should be, ethically if not legally, but are NOT cognizant of the field performance of handguns, what then can be expected of the general public? Usually not very much—either complete ignorance or a prejudiced misconception of ANY handgun's usefulness.

Consequently, big game handgunners have had limited success in promoting their sport to the general public. Also, until fairly recent, big game handgunners remained unacknowledged as a viable segment of the sport hunting fraternity. To improve the status of big game handgun hunting requires its devotees to actively promote and support the sport. While some good can be done on an individual to individual basis, it was and is believed that an organization of big game handgunners would prove more effective. With this in mind, a small cadre of dedicated big game handgun hunters got together and early in 1975 organized The American Big Game Handgunner's Association (ABGHA). The purpose of ABGHA being to increase the interest and participation of those individuals who do and/or would hunt big game with a handgun, and to promote the acceptance of big game handgun hunting by the general public as a truely sporting endeavor.

If big game handgun hunting is to be recognized and accepted by the general public as a sporting activity free of criticism, it is mandatory that each handgun hunter accept and then individually live by a code of standards—relative to big game hunting with a handgun—that reflect responsible behavior. It is suggested that ABGHA's "Handgun Hunter's Code of Standards" be used as a guide.

THE HANDGUN HUNTER'S CODE OF STANDARDS

1. *Know, before you shoot, what it is you intend to shoot.*
2. *Limit the shot to that distance where a vital hit is almost certain.*
3. *Do NOT attempt a shot at big game where its vitals are screened by an*

intervening medium.

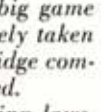
4. *Attempt no shot at moving game, unless or until prior practice on moving inanimate targets results in the skill needed to hit vitals.*
5. *Use a handgun/cartridge combination suitable for the species hunted.*
   a. *The bullet MUST penetrate into the vitals regardless of the angle or position of the game to the shooter, or do NOT shoot.*
   b. *The bullet MUST produce a sufficiently severe wound channel to cause a relatively quick kill.*
   c. *Do NOT shoot at any big game species NOT appropriately taken with the handgun/cartridge combination then being used.*
6. *Obey all applicable hunting laws, regulations, and rules.*
7. *Respect the landowner and what is his.*

Abiding by this code will help develop a better relationship between handgun hunters and non-hunters, as it results in safe gun handling, correct behavior afield, a respect for the other person, and a minimum of lost game.

Another way big game handgunners can help promote their sport is by participating in an ABGHA project. This project concerns the analysis of handgunned big game reports, and will be used to provide factual data on the actual and relative performance of handgun cartridges (loads) used to take big game. If you have legally taken big game with a handgun (begining with 1975 seasons), please write ABGHA (P.O. Box 1735—Wrangell, Alaska 99929) and request a copy of the ABGHA Form: BGR 6/1975. To have statistical significance, a datum base of at least 1500 reports will be used and ABGHA would prefer to have twice that amount. It is believed that the results of this ABGHA project will prove useful as additional support for those who will try to have big game handgun hunting made legal where it is currently illegal. However, to become a reality will require the participation of all handgun hunters who have taken big game.

The results of this project should prove interesting and might even resolve a few of the current questions regarding the efficiency of handgun cartridges (loads) used in taking big game. New questions will undoubtedly arise, but all-in-all it is believed that big game handgunning will ultimately benefit from the findings of this project. It is expected that future issues of this column or else separate articles in THE AMERICAN HANDGUNNER will present a detailed account of the above ABGHA project.

It is the intent of this author that this column should be informative and/or interesting—relative to handgun hunting in general and big game handgun hunting in particular. Although it will be difficult to always reply to letters, reader response will be appreciated.



TAKING AIM

By CLAUD S. HAMILTON

HANDGUN RELIABILITY
Part I-Ammunition Tests

It's a little after six in the morning, and a bone tired police officer on his way home after night duty, pulls in and parks at an all night drug store. He knows the place well; it's on his way home and he has been stopping here for a paper every morning, now, for months.

Climbing out of his old Mustang, fatigue seems to run from his shoulders right down to his toes. Oh, well . . . just a few more minutes 'til sack time. He's almost at the entrance, but something's not right here. There's Dave, the night manager, in conversation with a customer with his back turned to the entrance. He senses, can almost read, the fear in the night manager's face. As he opens the door the customer turns. The man has a gun in his hand. In what seems an eternity, he watches the gun come up toward him as he draws his own revolver. Only one gun goes off; the holdup man crumples to the floor.

This happened to a young friend of mine—who considers himself one of the luckiest police officers alive today. The robber's gun misfired. When examined later, it was found to have a broken firing pin—it could not have fired! The holdup man did not die as a result of the shooting and later confessed to robbing nearly a dozen service stations and small stores in the vicinity during the last six months. He never knew that his revolver was defective, had never cleaned it nor tried to practice with it. Makes you wonder, doesn't it?

Handgun reliability is a matter of vital concern to law officers. Unfortunately, in some of our larger cities some of them are called upon almost daily to depend upon their service guns to function right, the first time, and every time.

Most officers are keenly aware of this, but the approaches taken to assure reliable functioning are as varied as the personalities involved. I know one keenly knowledgeable young officer who refuses absolutely to depend upon one gun. He always carries two to double his chances! Others I know carry only one gun but lavish care and maintenance upon that gun to make certain it is always in tip top shape. On the other hand, there are officers not much interested in guns or shooting who prefer to put their trust in fate, hoping first that they'll never need their guns, but, that if they ever do, that those guns will somehow come through. Finally, there are even some who through well-intentioned but misguided modifications to their weapons reduce their effectiveness, make them slow to reload, or limit their use to one hand. I know of one instance in which a detective, attempting to correct a loose grip, inserted a washer under the grip and made his two inch revolver inoperable!

Dependable handguns are not the exclusive worry of the lawman. Businessmen and home owners who must depend upon handguns for defense until the police can arrive have an equal interest. Usually, though, they tend to feel less exposed than the police officer and are more often guilty of carelessness, ignorance or neglect where their guns are concerned.

Strong criticism, I know, but the atti-

tudes described are understandable. For one thing there are few knowledgeable gun lovers among either police officers or other citizens. For another, we Americans have for many years enjoyed the benefits of a magnificent firearms manufacturing industry which has given us some of the finest handguns the World has ever seen. Our faith in these guns is not misplaced. But, even the finest tools don't always work as they were meant to, and handguns are fine, complex tools which require care and more than a little understanding.

Because reliability in handguns is a matter of such concern to so many of us, or ought to be, it seems a good idea to take a hard look at the matter from the layman's point of view. Probably the easiest way to approach such a look see is to consider the various elements of the "handgun system" which, if you leave out the gunner himself, include: ammunition, gun and supporting equipment. First let's look at ammunition reliability.

Ammunition Tests

What are some of the more obvious things which attack ammunition reliability? If one leaves out consideration of things which might happen during manufacture or dealer storage—and which are beyond your control—a number of things come to mind:

—There's age;—There are the things which come in contact with guns and ammunition in the course of care, cleaning and use.—And there are environmental elements which would seem to depend upon where you live in some degree, but probably more upon how you use your gun. The traffic officer required to be out in all weather is a prime example; his gun and ammunition can really take a beating.

I don't believe that age has much to do with ammunition reliability these days. In the early days of metallic cartridges a lot of time and effort went into development of the components we have today which have if not overcome at least greatly lessened the effects of age. I regularly shoot ammunition over twenty years old these days and have yet to have my first malfunction with any of it.

No, I think the real problem lies with the things which get into guns and onto ammunition plus the exposure and physical abuse to which it may be subjected. So far no real revelations. The things I decided to look at were the effects of gun oil, gun grease, powder solvent, water, and some of the new, penetrating silicone cleaners. Also, of course, the effects of weather, heat and cold needed consideration along with the rough handling ammunition sometimes receives, particularly in an officer's belt. I had a pretty good idea that each of these poses a danger to reliability but what I did not know was just how much of a threat each might be.

To see what I could discover about the relative danger of these substances and conditions I decided to expose some selected new factory ammunition to them. Nine situations occurred to me to look into:

—One week of concentrated exposure to one of the new silicone cleaners/rust preventive compounds, in this case, WD 40.—One week of exposure to gun grease.—One week of exposure to gun oil.—One week submerged in water.—One week of exposure to powder solvent, in this case, Hoppe's Number 9.—One week of exposure to a cleaning solvent, in this case Gun Scrubber.—One week of storage at below freezing temperatures.—One week of exposure to the weather, heat, cold, wet, whatever it might bring.—Finally, one week of rough handling in a cartridge belt.

I wish that I had been able to expose ammunition to heat for a prolonged period, such as might be encountered in a locked police car in summer in the Southwest . . . but I could not devise a means to do this that seemed safe. I believe that definite deterioration would have taken place in the components but, of course, I can't prove this.

For the purposes of the test, I used five rounds, each, of two brands of 9 mm Parabellum, .38 Special and .45 Auto Colt Pistol ammunition, per test. The specific brands and loads I used are not important; the small number of rounds used makes comparisons of this kind meaningless.

Since one week of exposure doesn't correspond to much of a test I resolved to make each test somewhat exaggerated to compensate. In all but the rough handling and cold temperature tests, ammunition was heavily exposed to the test substance then sealed up in a plastic bag. The cold test ammunition was bagged then placed in a freezer, but not otherwise exposed. For the rough handling test, revolver cartridges were placed in the loops of a cartridge belt and in a leather dump pouch. Pistol cartridges were loaded into magazines then attached to the belt in leather magazine pouches. The belt was worn constantly, rubbed on chair backs, into and out of cars and, each time I went up or down the two flights of stairs at my office, the belt was thrown roughly up or down ahead of me! That may seem like going a bit far but I don't think so. Officers often get involved in scuffles when making an arrest which result in equal abuse to their equipment.

Before beginning the test week I inspected all of the test ammunition carefully for physical damage so as to be sure that nothing discovered after the test would be in doubt as to cause. It's a good thing that I did. I found one round of .45

ACP ammunition on which the mouth of the case had been damaged in factory loading. I rejected the round although I believe that the damage would not have caused a malfunction. This was an unusual occurrence; I cannot remember finding a defective cartridge previously in a new factory box. I also looked for burrs, deformations to cartridge rims and extractor grooves, and loose or damaged bullets. I found none.

After the test week had passed I opened the ammunition and again inspected it for outward signs of damage. The ammunition exposed to gun grease, gun oil, Gun Scrubber, WD 40, water and cold showed little if any external change. The ammunition in the rough handling test varied quite a bit. The revolver cartridges in the belt loops showed abrasions and most of the bullets were loosened in the cases so that they could be rotated easily with the fingers. The revolver cartridges in the dump pouch and the pistol cartridges in the magazines were undamaged. The ammunition exposed to the weather was badly discolored on both bullets and cases and the exposed lead on soft point rounds was grey from oxidation. The cartridges exposed to Hoppe's Number 9 bore cleaner were covered with a dark, blue-green grease evidently the result of a chemical reaction between copper and the solvent.

All the test ammunition was carefully cleaned by hand to remove lubricant, solvent or oxidation and insure no damage to the guns used or danger to the shooters. The shooting test gave the results shown in the table.

Keep in mind that the validity of a test like this is questionable at best. Very small samples of ammunition were used, and the exposure was pretty severe, much worse than any ammunition would ever be likely to be exposed to in your gun. Some very interesting things do seem to emerge from the test, however—Example: the excellent performance of the .45 ammunition. By contrast the equally poor showing of the .38 Special revolver cartridges I find easier to understand. Revolver cartridges with a crimp don't seem to be as durable or as resistant to outside agents as do pistol cartridges designed to stand up under the shock of semiautomatic actions.

During the test I unexpectedly encountered two jams with 9 mm Parabellum cartridges in the magazine of the P-38 used in the test. In both cases, cartridge cases had become sufficiently roughened and enlarged to catch on the inside of the magazine body preventing the spring and follower from presenting cartridges for loading. The damage was not enough to prevent hand feeding into the chamber and subsequent firing.

Ammunition from the cold temperature test had returned to normal temperature before the test was done. Had it been fired right out of the freezer the results might have been interesting at the target.

Test:	Ammunition calibers and lots fired:					
	.45-1	.45-2	.38-1	.38-2	9 mm P-1	9 mm P-2
Cold	All ok	All ok	All ok	All ok	All ok	All ok
Gun Scrubber	All ok	All ok	All ok	All ok	All ok	All ok
Gun Grease	All ok	All ok	No 4 round a hangfire after hammer fell; off target.	No's 2 and 4 hangfires; off target. No 5 bullet lodged one inch into barrel. Much soot, damp unburned powder.	No 1 blew back in shooter's face slow burning powder. Bullet did leave barrel; weak, off target. No's 3, 4 the same.	No 1 blew back unburned powder; weak, off target.
Weather	All ok	All ok	All ok	All ok	All ok	No 1 weak, off target, did not open slide No 3 jammed magazine due to corrosion.
Gun Oil	No 5 seemed weak; off target, did not eject.	All ok	No 2 weak, like cork pop, bullet out of barrel but off target No's 4, 5 same.	No 2 misfired. No 2 hangfire. No's 3, 4 weak, off target.	No's 1, 2 weak; off target, did not open slide. No's 3, 5 misfired.	All ok
Hoppe's Number 9	All ok	All ok	No's 1,4 misfired. No 3 squib; bullet lodged just into barrel.	No 1 misfired. No 2 squib, bullet lodged one inch from muzzle. No 4 lodged jacket at gap, core got out. No 5 hangfire.	No's 1, 2, 3, 4 misfires. No 5 weak, bullet off target.	No 2 jammed in magazine; had to be cleared with screwdriver.
WD 40	All ok	All ok	All ok	All ok	All ok	All ok
Water	All ok	All ok	No's 1, 2, 3 misfires. No 4 weak, off target.	All rounds misfires.	All rounds misfires.	No 4 misfired. No 5 weak, off target.
Rough Handling	All ok	All ok	All ok	All ok	All ok	All ok

Tapping out bullets that lodged in barrel.

Cold powder gives low pressure and velocity though whether or not the results would be detectable in handguns I do not know. Heat has the opposite effect, and borderline high pressure handloads could be dangerous after exposure to the sun or in a hot car.

On the day following the shoot I pulled the bullets of all the misfires. The powder in the rounds exposed to gun oil looked normal but showed signs of wetness when moved about with a matchstick. Powder from the batch exposed to Hoppe's Number 9 bore cleaner was obviously wet and dark in color, and caked when moved about. The powder from the weather misfires looked normal. That from the water misfires was all dark and obviously wet.

Keeping it segregated, I reloaded the powder from the misfires in freshly primed .45 ACP cases covering each with a wax plug. In no case would the large CCI primers I used ignite the powder. I again removed the powder and attempted to burn it by exposure to a lighted match. This time it all burned, though slowly and incompletely.

If the test results are to be believed it seems that the old admonition to "Keep Your Powder Dry!" still applies. Water did the greatest damage, with Hoppe's Number 9, oil and grease following close behind. I was surprised to note no damage whatever from exposure to WD 40 but not so much so in the case of Gun Scrubber, which is highly volatile and had pretty much evaporated before I managed to bag its batch of cartridges. Mostly, I think this test reaffirmed what I already knew—that ammunition reliability depends upon protecting it from exposure to the elements, cleaning and preservative substances and physical abuse.

One final word on ammunition. It isn't enough that you take proper care of it to gain all it can give in reliability. It is also vital that the handgun owner select the right ammunition in the first place. Many fine, older pistols such as the P-38 I used in this test will not feed well with the new, soft point bullets. My gun is not unique in this regard, and the new ammunition available in recent years should be checked out carefully in your pistol before you bet your life on it. Revolvers are not immune to problems and require properly crimped rounds or bullets may jar forward and jam rotation of the cylinder. This has happened to me with factory ammunition on occasion when very powerful loads were being used. It goes without saying also that you need to know where the ammunition you select shoots in your gun. With the broad spread of bullet weights and types available today this has become a real problem for most all calibers. If we keep these things in mind, I believe that we'll "have a handle" on the ammunition aspect of handgun reliability!

Part II—Gun Tests

ALL STEEL .357 Magnums

HW374TB

ARMINIUS REVOLVER

MADE IN GERMANY

- Steel Frame
- Double Action
- Ventilated Rib
- Large Target Grip
- Swing Out Cylinder
- One-Stroke Ejection
- Variety of Barrel Lengths
- Adjustable Micro Rear Sight
- Internal Hammer Safety Block
- Hardwood Grip (Optional)

AT GOOD DEALERS EVERYWHERE

HW3573TB

SUGGESTED RETAIL
$120.25 BLUE
$131.35 CHROME

HW3576TB

FIE

FIREARMS IMPORT AND EXPORT CORP.
P.O. BOX 520691 • MIAMI, FLORIDA 33152

Model	Cal.	BBL	Finish	Weight
HW3573TB	.357 Mag.	3"	Blue	35 oz.
HW3574TB	.357 Mag.	4"	Blue	36 oz.
HW3576TB	.357 Mag.	6"	Blue	38 oz.
HW3573TC	.357 Mag.	3"	Chrome	35 oz.
HW3574TC	.357 Mag.	4"	Chrome	36 oz.
HW3576TC	.357 Mag.	6"	Chrome	38 oz.

THE COMBAT COURSE

A PRACTICAL COURSE FOR HOME DEFENSE

By MASON WILLIAMS

The subtitle could easily be How to Force the Felon to Cease and Desist. Some readers will instantly associate this thinking with combat shooting. I have no intention of discussing combat shooting. The average civilian has no use for this knowledge. Further, combat shooting, in its true sense, pits a man against numerous targets that are out to kill him thus placing him in a position of having to fire at each and every target that confronts him. Combat shooting is tough, aggressive, forceful, driving. All I want to do is keep you, your wife, your children and possibly your mother-in-law alive. That's all. If you commence charging out into the night, guns blazing, you become legal game for your neighbors and for any law enforcement officer that comes barging around the corner to see what gives!

So here you are surrounded by crime, felons and criminals on bail. You want some means of defending yourself, your family and your home. Anyone who breaks and enters should be stopped in his tracks. Anyone who attacks should be stopped in his tracks. How can you best do this? How can you do this short of spraying the house, hallway and vicinity with bullets?

Despite our brief heritage as a nation upon this earth, we Americans have become so influenced by tradition, by TV, by movies, by the news media as a whole that it is difficult to sit down and empirically evaluate a situation that involves handguns, shooting and killing. Rather than attempt to ask the local cop on the beat what handgun he carries and then rush out and buy one, let's take a bit of time and go back and attempt to realistically evaluate your situation.

First off, no one can rape your wife, mug you, beat your children, set fire to your house or injure you unless they come close. We are discussing distances under ten feet. Isn't this true? Stop and think about it. We do not require a long range hunting cartridge. We do not need a super .44 Magnum that will drive through walls, down hallways or smash up TV's and furniture two rooms away. There is no reason to endanger other people in the house. There is nothing logical about sending projectiles screaming out through the neighborhood.

What do we need? At distances of ten feet the primary requirement is stopping power. A man comes barging through the bedroom door at night or swings up onto the living room porch during the day to smash the glass doors as you enter to see what is going on. Ten feet is a short distance. When he comes through that door you must be able to put him down in about four feet, thus giving you a six foot leeway. So what cartridge and handgun will do this best? In my opinion, there are three commercially produced cartridges and handguns that will basically do a good job. Remember now, nothing is fool proof. Anything can go wrong and anything I say can be disproved and contradicted, however, these three cartridges have proven themselves for a good many years as close range man stoppers. The first is the Colt Government Model .45 ACP pistol and cartridge. The second is the Colt Single Action revolver firing the .45 Long Colt cartridge. And third is the superb little Charter Arms .44 special Bulldog. Of the three, I sincerely believe that for most defensive purposes in urban and suburban areas, the Charter .44 is the best choice. It is light in weight. It is relatively inexpensive and ammunition is available anywhere.

The danger zone of the .44 special factory load is relatively short. By this I refer to what the bullet can do on a miss. If you don't believe you can miss sitting in bed, hunkered up and waiting, under stress when a felon slowly opens the door and stares at you, knife in hand, give it a bit more thought. Where does the bullet go when you miss? Can it smash on through partitions to possibly injure someone in the next room? Or will it basically stop in any normal partition? The depth of the bullet travel is known as the Danger Zone. Think about this for a moment. It is not possible to put down a felon and have no danger zone—UNLESS you do not miss. If you carefully place your shots you should have no danger zone.

The .44 special has a relatively small danger zone. Obviously, much depends upon the construction of the building. There is no pat answer. The .45 Long Colt has a deeper danger zone. The .45 ACP in its GI 230 grain full metal jacket loading can have a deep danger zone, however, this cartridge can be purchased loaded with a high velocity, relatively frangible 185 grain, hollow point bullet that has a far smaller danger zone than the GI loading. The man who handloads can cast hollow point lead bullets for both the .44 and .45 Long Colt that will deliver smashing stopping power at very low velocities using bullet weight to stop the felon rather than velocity. We are not interested here in ballistics or loading data. What we are concerned with here is what handgun to choose, in what caliber and then how to use it! We are interested in the safe and efficient use of the handgun. In other words—training.

Let's take each handgun and briefly go through basics with them. Remember we are not interested in reloading, nomenclature, stripping, cleaning. None of these details have any bearing uoon the ultimate use of the handgun in the hands of the student whether the student is a girl, man, grandmother, wife, etc. The only thing we are concerned with is the safe and efficient handling of the handgun in time of danger and stress. So we must strip away all of our conventional thinking and get down to the important factors right from the start. I am not bucking the youngsters or the adults who wish to learn to target shoot or hunt with a handgun. That is an entirely different phase of the shooting game. Training for match shooting or long range big bore handgun has nothing to do with forcing a felon to cease and desist!

The Colt .45 automatic pistol should be kept in a convenient place with the chamber loaded, six cartridges in the magazine and the hammer down. Safety obviously

would be off. Mechanically this is a safe method of leaving the pistol. The firing pin is shorter than the distance between the face of the hammer and the face of the breech block. Held to the rear by its spring, the firing pin remains forced to the rear away from the primer in the head of the cartridge. Condition is thus SAFE! This is the point at which I start the student.

The student is shown the pistol, hammer down, magazine in. The pistol is unloaded. I have the student handle the weapon, look it over, and then I discuss a practical place to keep it. A night stand? In the living room? Whatever place is chosen should be convenient and instantly accessible. Usually the bedroom near the bed is the best choice. The bedroom is home territory for the student.

Next step is to have the student learn the two handed hold. It is simple and fast to assume and, as shown here, provides a solid grip on the pistol. This hold places the thumbs of both hands close to the pistol hammer. Once the student has grasped the basic two handed hold and understands that such a hold provides a practical method of controlling the pistol during firing I have the student stick out his or her trigger finger. Stick it out flat alongside the receiver and tell them to act as if they were pointing at the target.

Now I have them reach up with either thumb and cock the hammer. The trigger finger remains flat along the receiver pointing at the target. Next, bring the trigger finger inside the trigger guard and smash off the hammer. The hammer falls. The student cocks the hammer again. Smash her off again and again and again until cocking the hammer, getting the thumb back down into the two handed grip and smashing off the hammer become an almost automatic series of movements.

And then it is time to cock the hammer and, keeping the trigger finger flat along the receiver, shove up the safety. Somewhere along the line when all the dust has settled and things have quieted down in the bedroom with the felon on the floor and people coming into the room, the student will have to make SAFE the pistol. The simplest method is by flicking up the manual safety. The pistol may then be placed on a bed or table top. The moment it is released the pistol has two safeties to prevent it from being fired—the manual safety and the automatic grip safety.

Once the student has learned these basics and the why's it is time to go out onto the range. Because there will be no bullseye shooting or shooting for fun I do not use bullseye targets or blank sheets of paper or cans or other plinking objects. I use felon targets put out by ATS in St. Paul, Minnesota. If the student has any intelligence, said student can instantly relate to these targets. They represent the facts of life brought home NOW—not in some dark distant future. The student either reacts correctly or we cancel out the whole operation. Because from this point on the training is identical whether a pistol, single action revolver or double action revolver is used, let's go back and check out the single and double action handguns.

The single action revolver is an anachronism in today's world that drips with tradition and nostalgia but which, strangely enough, has seized the American imagination. There are so many around and so many chambered for the excellent .45 Long Colt cartridge that we must discuss them. I consider the single action revolver to be an extremely dangerous handgun to work with. First of all the moment the hammer is cocked we are in a state of RED ALERT! If all six shots are to be fired or if the student has sense enough to stop firing and leave the hammer down, the situation can be acceptable but usually the student ends up with four shots fired and the hammer back and a "where do we go from here" expression on his face.

Keep in mind that under stress the student will probably have no idea of how many shots have been fired. Probably the average student will have no clear realization that the hammer remains back ready to fall upon a cartridge and here are the police, friends, relatives and such like storming into the room. Now what? Using the two handed hold I merely instruct the student to place the thumb of the left hand in front of the hammer and pull the trigger. Far better to bugger up a thumb slightly than to wipe out the local constabulatory or grandma! Next, and I pound and pound this into the student's head, get your cotton picking trigger finger out of the trigger guard, then don't do anything. Let someone else carefully get the single action .45 Long Colt out of the student's hand and put it down.

Despite these problems, I sincerely believe that the .45 Long Colt cartridge justifies spending the extra time to train and train the student on the safe and efficient handling of this handgun.

As for the conventional double action revolver, we are right back to the simplicity inherent in the .45 ACP. No need to delve into reloading, swinging out the cylinder or other nonessentials. Here is the revolver. It is loaded. To fire, pull the trigger!

Finally, To The Range

Now out to the range. I have discussed the use of ATS targets. I put up three different ones trying, whenever possible, to use the ones that show a man with a broken bottle, another with a knife and the third showing a girl with a shotgun. This gives us three varying stages of DANGER. I explain this to the student. Obviously a gal with a shotgun, smashing in a door is a lot more dangerous at that moment than a man with a broken bottle staring down the hall. On the other hand a man with a knife should not be taken lightly.

I start the student about three feet from the shotgun/gal target, handgun in hand. The student then goes into the two handed hold and, firing from the hip, fires one single shot only into the target aiming, hopefully, for the stomach. The bullet usually goes where it should. I treat this as a foregone conclusion and move the student back one full pace. Again, a single shot. Again a hit. This continues for five shots or until the handgun is empty.

I then take the handgun, reload it, hand it back to the student and we repeat. Again reload, hand it back and start the student from about ten feet. The handgun is raised to about shoulder height and is pointed, not aimed at the center of the figures. Now the student fires first at the shotgun, then at the knife and then at the bottle. Usually these are good solid hits. Then repeat.

At this point I commence challenging the student to hit various parts of the figures. Perhaps the belt buckle. Or the chest. As we progress I throw in head shots. It is surprising how the student will come along and react correctly. By this time the situation is under control. The student has confidence and is making hits. I then stop and we return to the house.

Training Session Goes To The House

I take the student to the bedroom and explain the various methods of firing from a fixed, chosen spot. I prefer to have the student sit on the bed, back to the wall, legs drawn up, handgun held with the two handed hold and locked securely between the knees aimed at the center of the door. This gives the student a solid firing platform. It gives the student a tremendous feeling of security with back to wall, handgun steady.

Why the bedroom and bed? We are not attempting to produce an urban, free wheeling, close quarter combat shooter that can roam a house and respond to attack and kill with the reflexes of a cat. All we are trying to do is teach a man, woman, youngster, grandparent how to protect themselves from an attacker and house breaker. "Make the person come to you. You have chosen your spot. Get to it, prepare and wait. You have every advantage. The moment you see the felon's weapon, point the handgun at the belt buckle and empty the handgun." I stress and stress "don't go looking for the felon. If there is someone in the house, that person will eventually work their way to you."

This entire training program takes less than two hours. About one hour of preparation and one hour of range firing. I like to take the student and give refresher courses a couple of times a year. In my opinion, there is no need to burden such a course with noneessentials. Keep it simple!

HAVE SECURITY AND GOOD LOOKS WITH

No-Screw Grips

By RUSS GAERTNER

Grips can make or break your handgunning. A good pair of stocks dresses up any gun, and custom grips fitted to the hand give the same solid hold shot after shot, a key requirement for accuracy. Recoil control features may make the difference between comfortable shooting and plain misery, especially with the big magnums.

I have been making my own grips for revolvers and semi-autos for several years, in order to fit each to my hand and gun. The one undesirable feature of these homemade grips—as well as commercial stocks—was the grip screw.

Most handgunners, I believe, consider grip screws a necessary evil. If you've ever tightened a loose one a bit too much, only to split a beautiful set of stocks, you understand the feeling. And why are the screws always placed so that they irritate the palm of your hand or the fingertips? Finally, the screw mars the flow of subtle wood grains.

Custom grip makers have experimented with systems to eliminate screws. To

The heavy recoil of the S&W M-29 is tamed by the author's fitted grips with exclusive no-screw fastening do-it-yourself design.

The smooth, snag-free contour of the author's screwless grips provide extra comfort in firing heavy full charge magnum loads.

Roughly inletted grips for a Smith & Wesson M-29 have been shaped with a router bit on an electric drill press prior to fitting.

The loose inletting is tightened by epoxy bedding to form a secure, split-proof fit on the hard-kicking Model 29 .44 magnum.

my knowledge, only two methods have been successful and both have drawbacks. A solid blank can be inletted internally—a job requiring great skill—and attached with cement. Or a blank can be sawed into halves, which are inletted as usual and glued back together over the frame to match the grain, then shaped, sanded and finished on the gun.

Both methods are capable of fine results in the hands of experts, but the grips are permanent. Internal cleaning or a broken mainspring means splitting them. Such grips are designed for display, not shooting. Amateur wood butchers, such as myself, should not tackle either method.

For a couple of years at this writing, I have been shooting with handgun grips of a new type. They have no external hardware, and only a narrow slot under the butt is visible on the finished grips.

They can be removed instantly for cleaning or repairs on the gun, then replaced as quickly, or switched with another set. It would be simple to have two sets—say, all-out target stocks and combat grips—for the same gun. No alteration of the gun is necessary.

Will these grips withstand heavy recoil? I have used sets of them on both a Colt's Official Police .38 and a Charter Arms Bulldog .44 Special with a lot of heavy loads, but the best example is the set on a Smith and Wesson Model 29 .44 Magnum which is still tight and rock-solid after over a year of rapid-fire double-action work with handloads up to and including many of fullhouse power. I also had occasion to fire a series of hotter-than-factory handloads; these were too stiff with the good factory target grips, but my screwless grips tamed them nicely.

For magnums I strongly recommend the following bedding procedure. Grips break because they fit slightly tighter in one or two areas, and these become pressure points to start a split along the grain of the wood. Bedding prevents that by providing a perfect fit and by strengthening the wood. If your inletting is play-free and uniform, you need not bed them.

Any revolver grip can be attached by this method. The revolver must have room inside of the grip frame, at least a 3/8 inch circle which will not interfere with the spring or hammer in either the cocked or fired position. Colt's and Rugers have a large hole in the frame. Smiths have a space behind the leaf spring which is usable.

If you bed the inletting, follow the directions with your kit, coating the frame with release agent and allowing it to dry completely. I prefer Brownell's Accraglas, an epoxy, but others will work.

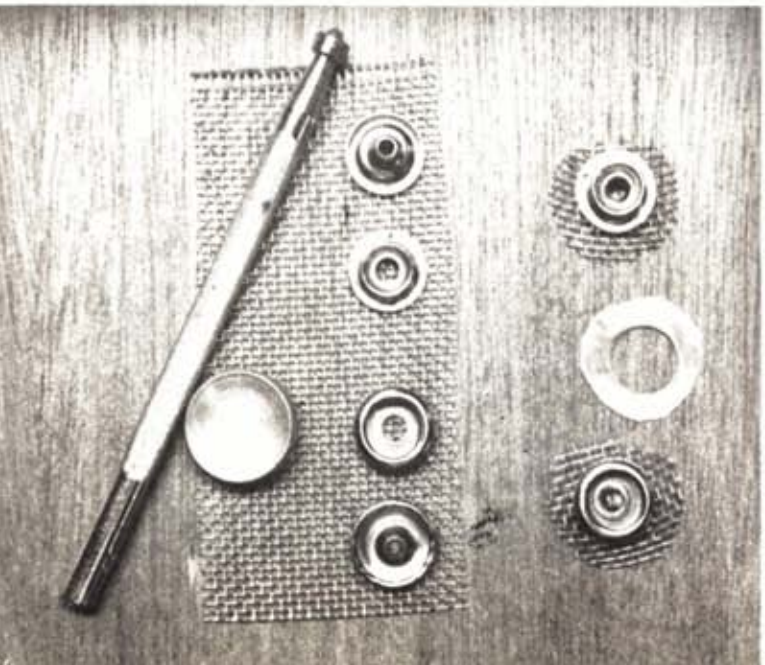
Bed one grip at a time. Apply epoxy mix sparingly to the inletting, clamp the grip firmly to the frame, and allow it to cure overnight. Tap it off of the frame and trim away the excess. Clean the frame and seat both grips on the frame to be certain they meet in a hairline. If not, more trimming is needed.

Before bedding the second grip, file a release slot into the bottom of one grip. The slot is 1/16 inch wide and 1/2 to 3/4 inch long. It allows a screwdriver blade or coin to be inserted between the two grips. Apply some of the epoxy mix to the slot sides to harden the wood.

Reseat the first bedded grip on the frame and apply release agent to both frame and the inside surface of the first grip where it will come into contact with the second grip. Allow it to dry.

Next apply epoxy mix to the inletting of the second grip and bring it up from below the frame, seating it firmly; clamp the grips up tightly together in this position and allow to cure completely.

To release the first grip, insert a screwdriver blade into the release slot and twist to the second grip side. The newly bedded



The hardware used in assembling the author's screwless grips is inexpensive and quite easy to obtain from hardware and leather suppliers.

Bedded grips have male and female snap halves fitted in position. Note trimmed filler-washer to clear frame and spring.

Ready for final fitting, the assembled halves are snapped together and epoxy has been liberally applied to the grip panel for final bond.

grip should be easily tapped off of the frame. Trim again and clean off the release agent from both frame and inletting. The grips should now fit easily, with no more than a hairline between them on the gun. Epoxy shrinks slightly on curing for an ideal fit, perfect but easily removable. Some further trimming may be required to get a perfect fit, but do not loosen the bedding, or your work to this point will be wasted.

The hardware is a set of large snaps of the type used on leather holsters. Do not use small snaps designed for cloth. They will not work and may ruin your grips. The correct type has a split-ring wire spring inside of the female part. They can be purchased from leather dealers or hobby shops. Tandy Company shops sell a dozen pairs for about a dollar. Buy a rivet punch and anvil also.

The idea is to cement a set of snaps inside of the grips, but it must be done precisely for both a tight fit and a smooth release. First determine the position for the snaps inside of the grip frame. Check that there is clearance in both the cocked and fired positions. You may have to file down the edges of the snaps in some guns, but do not alter the working areas of the snaps.

Now measure the frame thickness of the gun. The Tandy snaps are only 3/8 inch thick, assembled with no filler and snapped together. One or more 1/16 inch steel washers should be used as fillers to make the snaps 1/8 inch thicker, assembled and snapped, than the grip frame. Wire mesh may be used in place of, or in addition to, washers for secure cementing.

Make up a set of snaps, grinding down the rivet stems until about 1/16 inch protrudes from the inside hole, then set the rivets with the punch and anvil. Make or purchase a spacing washer, 1/32 inch thick with a 1/2 inch hole to fit over the male snap. This prevents the snaps from closing completely during final cementing, so that snap tension holds the grips firmly. Roughen the bottoms of the snaps on a grinder or with sandpaper, for best cement bonding.

Next, hollow out the inside surfaces of both grips until they can be fully seated on the grip frame with the closed assembled snaps inside. The wood should be left rough. Brush out wood dust.

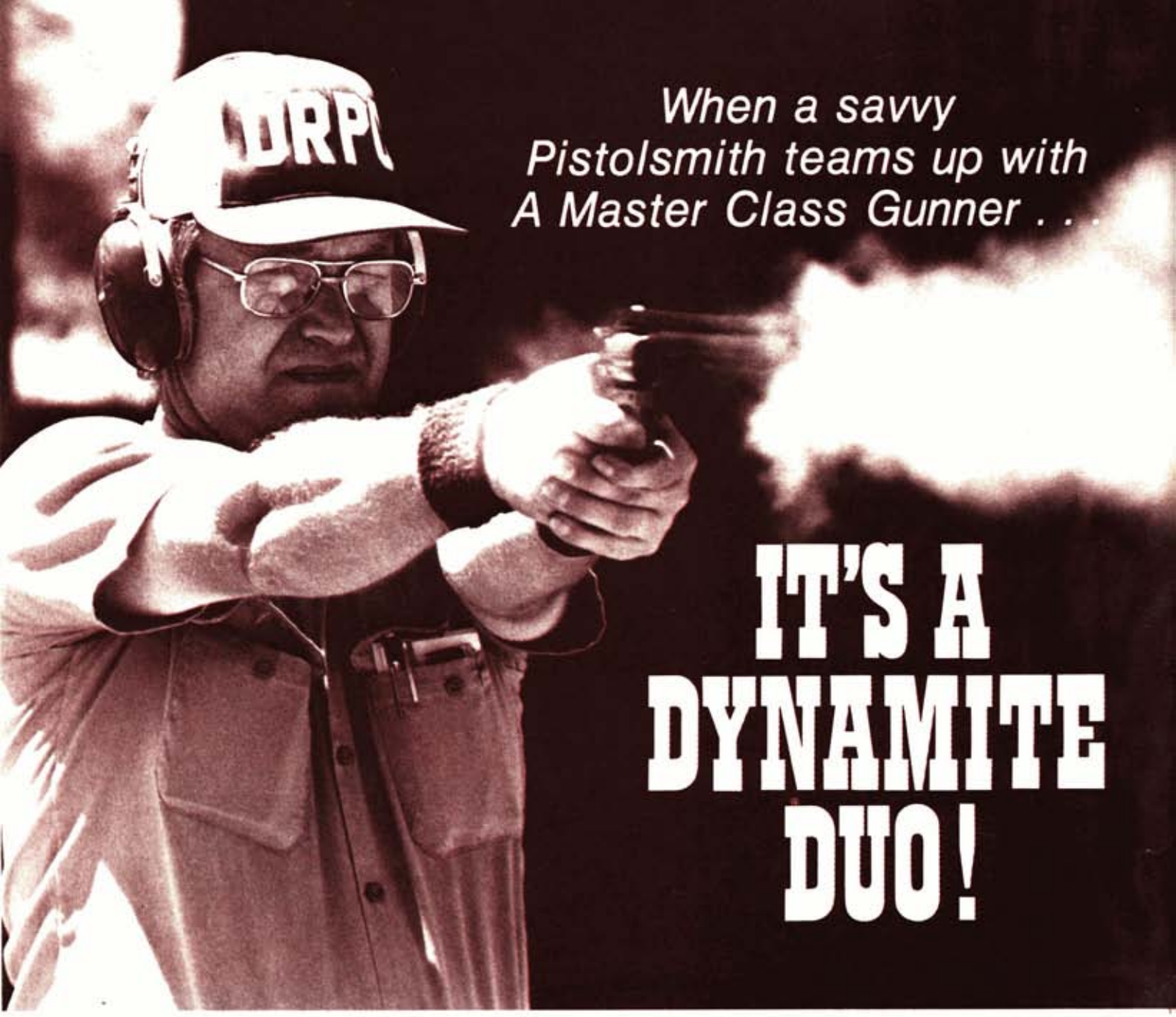
You are now ready to cement one of the snap parts. Clean them to remove oil or grease. Either snap half can be cemented into the hollowed area of either grip first, using epoxy bedding mix or epoxy cement, such as Duro Epoxy.

With release agent on the frame, seat the grip firmly, place epoxy mix in the hollow, twist the snap part into it, keeping the part straight on the verticle, and let the cement cure completely.

(Continued on page 64)

An inside look at the finished product: screwless grips that are both secure and functional. Note close fitting, but not tight, inletting.

Seen from the outside, the finished grips are coated with a sweat-proof 2-part epoxy varnish. The handfitting contour allows a firm hold.



When a savvy Pistolsmith teams up with A Master Class Gunner . . .

IT'S A DYNAMITE DUO!

By BYRON BOOTS

Modern peacetime combat activities, especially on a civilized civilian level, consists of battle axes made by Smith & Wesson and Colt, to name two of the tops. But two Smiths, a .38 and a .45 Colt (converted from a .41 magnum), and a certified public accountant (number cruncher), are the subjects of this story.

Frank Cress, 41, assistant finance director of Oroville (where's that?), California, began his interest in combat shooting after co-founding the Oroville Rifle and Pistol Club. He's now president and a Grand Master shooter of wheelguns.

His first fistfull was a 7.65 Luger back in 1958, which is a far cry from the .38 and .45 bull-barreled Charlie Clemens modified pieces he now sports to shooting matches. Clemens is a Chico, California, based gunsmith (North Valley Gun Shop) and is a well-traveled Master shooter as well.

The evolution of the Cress pistols follows the evolution of the shooter who began in the Brea Rifle and Pistol Club of southern California, where he became exposed to fine weaponry and shooting expertise from '58 to '62. A few moves north with wife, Sharon, and four kids landed him in Oroville in '70.

His first combat shooting match yielded 399 points out of a possible 420—which started him off in the Expert class. That hooked him on shooting the PPC short course.

But it wasn't long before he found his Model 14 Smith & Wesson .38 lacking in the necessary barrel weight for consistency in his 414-420 average (though his best was a warm 418-420).

Cress noted the 8-inch barrels with full-length ribs, the finely adjustable sights, the semi- or full custom grips with reliefs for speedloading ease, and that most GM pieces were Smiths. So he decided to have some of his own ideas wrapped up in a package.

Fellow shooters recommended Charlie C. for the smithing, and the pieces began to take shape.

The first, of course, was the .38. Frank chose a Smith Model 10 .38 M&P because it was built on the K frame. That way the price was right as well as the frame. The 5-inch barrel was to re-

tire unused.

Then Charlie installed an 8⅛-inch snout machined from a Douglas Premium blank. The smith turned it down to an outside diameter of 15/16-inch, which was considered the largest that could be cosmetically fitted to the wheeler. The twist was one-turn-in-18-inches so the piece could be possibly put to use as a hunter as well as a paper cutter. The cylinder gap was set to .006-inch.

Chas C. custom-made and fitted the forward cylinder lock and crowned the barrel, then installed an 8-inch custom rib with Eliason sights, the same as found on the Colt Gold Cup pistols.

Clemens also sandblasted the top of the rib to cut down glare. The rib free-floats over the top strap. A smooth-faced trigger and a target hammer were installed after he smoothed and stoned the critical points of friction in the entire action.

Cress requested and got a stippled backstrap, and the bottom of the cylinder release latch was milled off for speedloader clearance. The chambers were chamfered to admit full wadcutters in a hurry.

Hurry was also the reason the righthand front side of the trigger guard was thinned—to keep an errant fingernail from hanging up in a quick-draw situation.

Clemens assembled and test-fired the wheeler while still in the white, then polished her down and lovingly dressed her in a very deep satin blue. Her coming-out costume was finished with a set of slightly-modified (left-hand stock relief for positive cartridge ejection) Herrett's Shooting Star Stocks.

Frank attended three matches, taking home a first Grand Master Individual, a second GM aggregate, and a second GMI. He raised his personal all-time best score

Clemens thinned the trigger guard of Frank's .38 to eliminate the possibility of snagging a fingernail on it during a quick draw.

to 419-420 with 32X (of a possible 42X), and has fired several possibles in practice.

But the indomitable mind didn't stop. Old West shooters always used a .45. And a .45 cuts a larger hole than a .38. Besides, Frank always did like the .45 Colt cartridge.

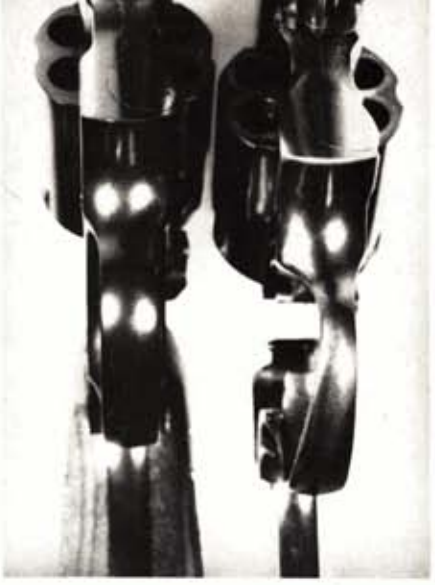
As you buffs know, there is no modern double action .45 Colt wheelgun available. So, it was back to Charlie C. This time with a Smith Model 58 M&P .41 magnum, fixed sights and all.

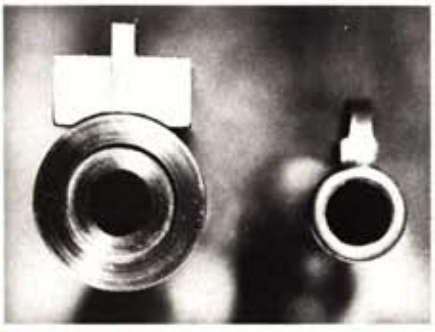
The Model 58 sports the N frame which is also used in the .44 maggie Model 29 and the .45 ACP Model 25 target wheelers.

Charlie filled Frank's order again, but this time the stats were slightly different: a 6-inch custom, slab-sided (½-inch milled flats each side), one-in-17, crowned barrel from Douglas Premium barrel stock with a .452 groove diameter to allow for the use of modern .45 caliber bullets, and a 15/16ths O.D.; a Bowmar K-frame combat rib specially modified to clear the larger N-frame top strap (which also had to be inlet for the elevation adjustments); the cylinders were rechambered to the larger caliber; along with the rest of the goodies similar to the first job.

Clemens felt the wheel was ample to take the boring and larger ammo because the same cylinder was used in the .44 magnum wrist-buster. (The minimum wall thickness at the cylinder notches ranged from .019 to .023-inch.)

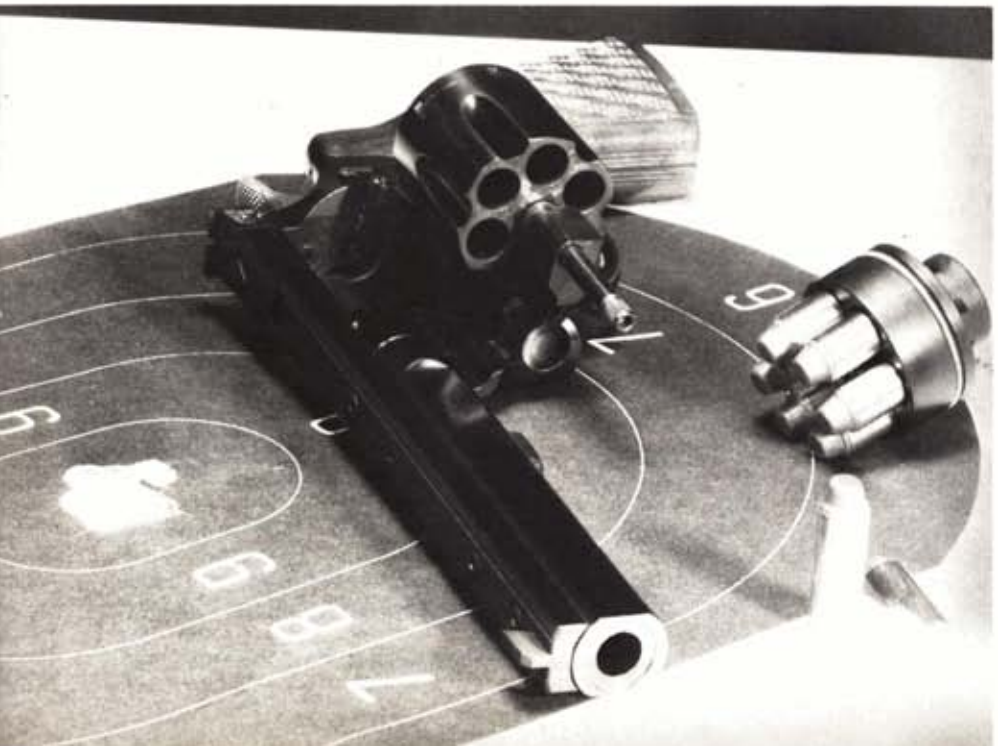
The new piece was then test-fired. To be specific, 15 rounds at 15 yards in a 1½-inch group, 15X—two-handed, no support. The ammunition used is .45 Colt loaded with 5.5 grains of Bullseye behind Zero brand outside lubed 185 grain semi-wads in new Remington cases, fired by standard Remington large pistol primers.



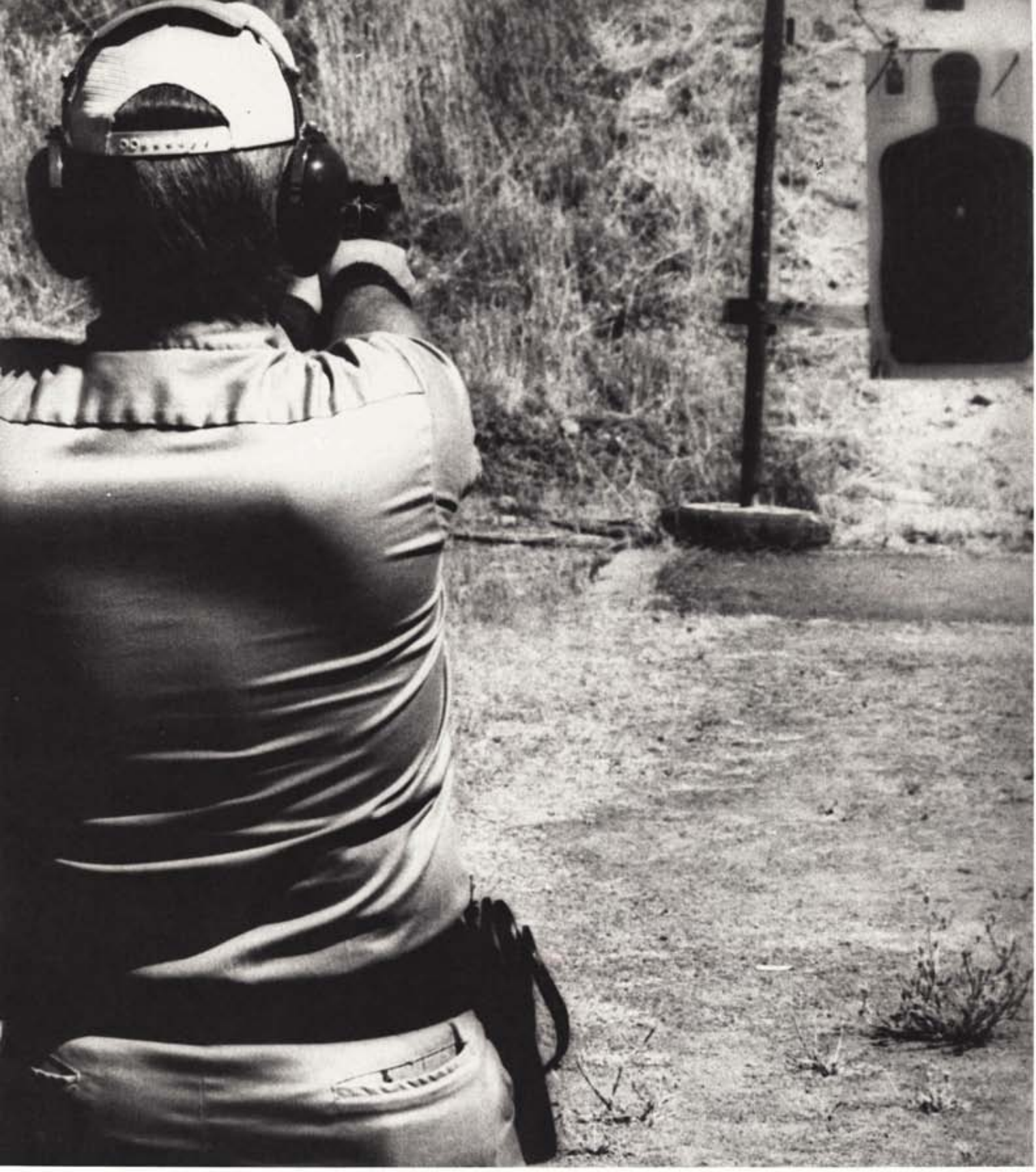


Frank's .38 wears a crowned Douglas Premium bull barrel. Note the massive barrel walls as compared to a standard M-10 barrel.

Frank found the Dade .44 mag speedloader worked well for the .45 Colt ammo. He and Charlie are now testing lighter loads in the "superbly" (claims Frank) accurate piece. (After this writer fired both pieces, the description seemed an understatement. At 15 yards, one-handed, double action, the dude in black was in a world of hurt from the X out to the niner circle. The mythical sidekick standing next to him was also hurting after I pulled one out to the edge of the cardboard. A Cress-Clemens adjustment on my head kept the rest in a "projected' 400 plus-minus of 420 in the PPC short course. I add this only for two reasons: owner's talk can be cheap but performance proved neither to be liars; and it was just plain fun



Frank Cress' Clemens-modified S&W is rechambered for .45 Colt. The obvious level of accuracy obtained from the Douglas barrel is shown.



Frank Cress proves the accuracy of his Clemens-modified .45 Colt by blasting the heart out of a combat silhouette target.

and sheer pleasure to drive a Maserati after too many crippled Bugs, allegorically speaking.)

The smaller wheelgun's ammo is .38 cases bottomed with CCI small pistol primers to fire 2.5 grains of Bullseye, giving the hustle to the Zero outside lubed 148-grain hollow base wadcutter.

For those of you interested in getting in touch with the smith, his address is Charles Clemens, North Valley Gun Shop, 789 Lorinda Lane, Chico, California, 95926. His Mother Bell rings by dialing 916-345-9364.

Clemen's 20-step jobs for Cress basically entailed: 1. Disassembly. 2. Remove

The raw materials for a Clemens Combat Conversion include a custom rib (shown in the white) and finely adjustable Elliason sights. Note that Charlie has modified the Herrett's grips to ease speedloading the .38.

Clemen's fine stippling is shown compared to the as-issued S&W item. The stippling allows a better grip for finer D.A. control.

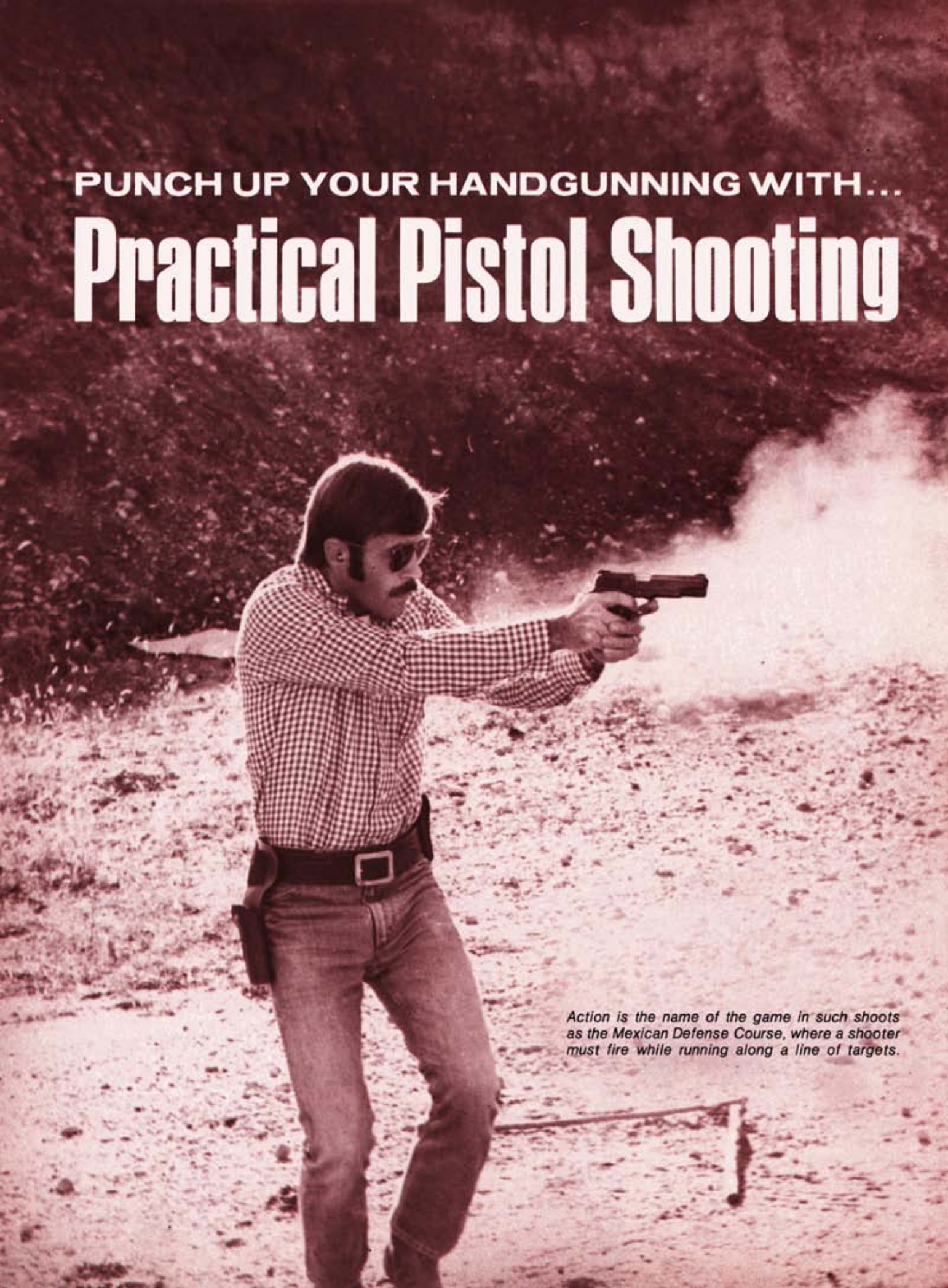
The cylinder mouths of the Clemens .38 are chambered to ease speedloading insertion of wadcutter rounds.

barrel. 3. Cut barrel blank ¼-inch longer than finished product. 4. Turn barrel to the O.D. desired. 5. Use micrometer to measure through the front of the frame to the cylinder face to determine the proper barrel extension length. 6. Turn and thread the barrel extension. 7. Fit the barrel to the frame and cylinder with a gap of .006 between the barrel and cylinder. 8. Mark the bottom of the barrel for milling for the bolt lock. 9. Remove barrel and mill for the bolt lock. 10. Crown the barrel. 11. Fit a block to the milled slot. 12. Put barrel back in the frame. 13. Mark the block by putting a rod through the frame, cylinder and ejector rod. 14. Drill the block. 15. Make the lock parts and fit them. 16. Install the sight or rib and sights, as the case may be. 17. Silver solder the lock on the disassembled barrel. 18. Do backstrap stippling, internal and other external work such as triggerguard thinning, etc. 19. Test. 20. Polish and blue.

Gunner and gunsmith team up on the line for rapid fire practice.

PUNCH UP YOUR HANDGUNNING WITH...

Practical Pistol Shooting



Action is the name of the game in such shoots as the Mexican Defense Course, where a shooter must fire while running along a line of targets.

By RICK MILLER

Has your handgun shooting gone a little stale lately? Has the old enjoyment you used to derive from paper punching or plinking been missing recently from your favorite pastime? Or maybe the thought of new worlds to conquer might stimulate your interest. If so, maybe this article can provide some ideas on how to spice things up a bit.

Practical pistol shooting has one very serious goal; namely, that of developing lifesaving handgun skill for police, military, or civilian shooters. But in addition to that serious aspect, people who have tried it find that it is also great fun! Aside from developing an eminently useful skill, the sport of practical pistol shooting is much more stimulating than conventional target shooting. Formalized target shooting is a fine sport, and a very demanding one. But some people, myself included, find it a bit slow and unrelated to reality.

If your shooting enjoyment or interest has sagged a bit lately maybe you should try firing a few of the so called "combat" courses to liven things up a little. Since these courses stress accuracy, power, speed, versatility, and more realistic conditions, they can never be described as dull. My hunch is that once you've tried the sport of practical pistol shooting you will be hooked for life!

Assuming that you are new to the game, the first and most basic step is to assure safe gun handling. One prominent aspect of practical pistol shooting is that all firing starts with the gun holstered. It therefore behooves the individual to become proficient in drawing from the leather. This means plenty of practice at home with an empty gun before you head for the range. Even if you have been shooting for quite a long time, the dry practice is still necessary if you are not familiar with this aspect of the sport. There is nothing more ludicrous or hair-raising than to watch someone attempt a quick draw with a loaded pistol, and produce a fumble instead!

A properly executed quick draw is quite safe, so long as the individual has practiced the act thoroughly, and never loses sight of the fact that speed without accuracy is just a waste of time. The beginning pistolero should forget about speed and strive for smoothness, consistency, and accuracy. After he has attained these three important qualities, the speed will gradually come without forcing it.

While an individual is perfecting a smooth drawing technique he may as well go ahead and incorporate the Weaver Shooting Stance into the exercise. This technique has been proven superior for most defensive shooting situations, and should be practiced from the very beginning. Placing two hands on the weapon improves accuracy under all shooting conditions that call for speed, and recovery from recoil for follow up shots or shifting point of aim is quicker and subject to better control.

The chief argument of the unenlightened against the Weaver Stance is that they think it is slow. Nothing could be further from the truth. The two handed speed shooting technique is fully as quick as a one hand point, and accuracy and control with two hands is vastly superior. Even if one hand point shooting might be quicker up close, the advantage of accuracy would still lie with the two hand eye level position. Hits are what count, and very few people are able or willing to devote the time and effort needed for development of accurate unsighted shooting.

This leads us up to the whole point of practical pistol shooting; to find out what systems work best under simulated combat conditions, and to stimulate enough interest on the part of the individual to insure that he will become as proficient as possible in these potentially lifesaving skills. Here is where the importance of the combat match comes into the picture. The Weaver Stance only started to dominate the picture when Jack Weaver proved in open competition that one hand point shooting could not measure up to his new technique. Without the stimulation of competition this method of shooting would probably not have been developed, and without shoulder to shoulder contests its superiority could not easily have been demonstrated.

There are an endless variety of courses open to the practical pistol shooter to practice and experiment with. There are several reasons for this. The situations possible in a gunfight are quite varied, and therefore each course should pose a variety of different problems. This will help the shooter expand and grow while keeping him from stagnating or over-specializing to meet only one set of limited challenges.

Perhaps if we describe a few of the varied challenges encountered in some of the standard courses of fire you'll get a better idea of what I mean. I won't go into minute detail with each course, but will give enough information to show the essence of practical pistol shooting. As you read,

Practical pistol shooting helps to develop efficient and functional equipment. Author's rig is a forward rake, thumb break duty holster made by Bianchi for the .45 Colt Auto.

Solid two-hand hold, with fingers of left hand overlapping fingers of the right hand; left thumb over the right. Left arm pulls back against the right.

Most of the standard combat course do not require any elaborate equipment. This string of targets for the Mexican Defense Course were set up with cardboard targets and an improvised holder. The targets are set low to get the most out of the sand bank backstop.

just remember that the list of contests and variations is only as limited as your imagination and your physical limits.

One other point I'd like to make before we get into our description is that you don't need an elaborate setup for most of these combat courses. As some of the photos show, all you need is a little ingenuity to set things up in a perfectly satisfactory manner. All that is needed is an area where shooting may be conducted with safety for the shooters and without disturbance to the general public.

The Mexican Defense Course is a good one to start with. It requires pivoting, drawing, rapid fire on single and multiple targets, and movement on the part of the shooter while firing. All this at a range of eight to ten yards. As varied as this may seem, it was not good enough for Jeff Cooper. Back in the late 50's he added two additional stages to compliment the original four. These last two stages of the Modified Mex. require running laterally a distance of sixteen feet across the front of the targets while firing. All strings must be fired in five seconds or less. The last two stages really separate the pistoleros from the ordinary pistol shooters!

Another example of a standard course that has been modified for practical pistol shooting is the International Rapid Fire Course. As originally designed, this one is a very stylized and restricted combat course for target shooters that is shot with .22 Short autoloading pistols. Shooting is commenced with pistol in hand and ready. Time limits range from eight seconds, to six, to four, with one shot being fired at each of five targets within the allotted time limit at twenty-five meters range.

In contrast, the modified course is fired with service sidearms and full power ammunition. Each string is started with pistol holstered, hands clear, and four second time limits. The standard combat silhouette replaces its stylized International counterpart with its many small scoring rings. Fired in this modified guise, the International Rapid Fire Course makes a stimulating and challenging, if somewhat limited, combat contest.

The Assault Course is another outstanding example of a standard combat match. Probably the best feature of this one is the variety that can be worked into it. No two Assault Courses are ever exactly the same, because the targets may be relocated, placed at varying distances, be partially concealed from the shooter's view, and the terrain over which the course is run may be changed completely.

In this one the shooter moves along a designated trail endeavoring to spot all targets, hit them quickly as he moves along, and get to the finish line as fast as possible. Reloading along the way is required, and a sharp eye is needed to spot all the targets as the shooter moves along. The Assault Course is always a favorite, because of the action and variety.

Unrestricted competition lets you use diverse equipment. Here the revolver is pitted against an auto pistol on the rapid fire course.

The simplest form of man-against-man contest is the Leatherslap. In this type of match two contestants are pitted against each other shoulder to shoulder at a range of seven yards. The targets are inflated balloons, and the only object is to break yours ahead of your opponent. Two out of three, or three out of five wins constitute one bout. Good reflexes, smooth technique, and coarse short range accuracy are the prerequisites here. Steady nerves also help, because the man against man contests always generate excitement.

This short review of several standard courses is only meant to give you an idea of the principles involved, the skills required, and the diversity of challenges encountered in this type of shooting. There are many more standard courses that could be mentioned. Beyond that, surprise shoots and improvised bouts bring endless possibilities into the picture.

Speaking of variety, that is certainly what you will find when looking at the equipment used by individual shooters. The pistols, holsters, and other related accessories are all subject to the personal tastes and whims of the gent using them. Furthermore, some contests will call for more specialized equipment than others. For example, the equipment used in a match stressing concealability will be somewhat different than that found in a contest calling for all out speed. This dissimilarity of equipment is a good thing, because, as mentioned before, only through comparing various ideas in competition with one another can we find out which of them works best.

For all around use in this sort of shooting a well built duty outfit or competition speed rig is hard to beat. This usually consists of a heavy gun belt and holster worn on the shooter's strong side with butt to the rear for a conventional draw. Some shooters prefer the pistol butt tilted forward in the traditional manner and others prefer it tipped back about eighteen degrees in what is called the "speed rake" position. For practical purposes either position will do, but the speed rake offers the advantage of slightly greater speed and better control of the weapon throughout the drawing sequence.

Some duty style competition rigs have no retaining device, while others have a friction set screw you simply draw the pistol against. Nowadays, the most common and probably most practical are the thumb break safety straps, which are finding great favor among police officers around the country.

Holsters for undercover wear really show diversity and ingenuity. Some are

Shooter assumes shoulder-high ready position while buddy checks his time on stage six of the Mexican course.

Below: Firing stage six of the Mex course with a single action, as the judge watches both hits and timing.

made to carry the standard duty weapon, and others are designed for smaller belly-guns. They range in concept from the more or less standard FBI style waistband holster, through inside the waistband models, cross draw holsters, belt slides, and shoulder holsters.

Other important accessories include speed loaders and carriers for DA revolver users, and fast grab magazine pouches for the auto pistol shooter. The quick reload is an essential element in the doctrine of modern pistolcraft, and these devices have been developed over the years by ingenius pistolmen to simplify the task.

Since we are on the subject of efficiency, we may as well go ahead and mention the autoloading pistol before we close. Revolvers may be used in this sport of course, but they don't stand up very well against a properly handled selfloading pistol. The big service pistols such as the Colt .45 Auto or Browning's P-35 are much easier to manipulate quickly and accurately than any single or double action revolver. For equal amounts of practice the average shooter will achieve better results with the selfloading pistol than with any DA revolver. The single action wheelgun is so far behind the other two that it should only be considered for defense when nothing else is available.

Notwithstanding the proven superiority of the autoloading pistol, if you are a police officer who is required by regulation to carry a DA revolver, then by all means use it in practice! It may not be the most efficient weapon in the world, but it will be the only one of importance to you when the chips are down. The degree of skill you develop may make all the difference if the unfortunate day comes when you may have to use it.

Among my shooting friends the single action autoloader (specifically the Colt .45 Auto) has just about reigned supreme on all combat courses of fire. The only times a revolver shooter even stood a remote chance of winning against the 1911 auto occurred in those contests calling for one draw and one shot at a time. On multiple targets or in rapid reloading the revolver just cannot match the selfloader for efficiency. A really good shooter can more or less offset the revolver's disadvantages if he works hard enough. The point is, if he has a choice, why should he? I should think the obvious solution would be to go to the more efficient handgun.

Regardless of what type of equipment you personally advocate, the real point of practical pistol practice is to find out how well you perform on realistic courses set up to simulate possible combat situations. After you try a few courses of fire, chances are you will find there is plenty of room for improvement. But don't let that discourage you, most of us found out very quickly that we were not as hot as we thought we were. Once you find this out you can experience the twofold pleasure of sharpening a potentially lifesaving skill while engaging in a very stimulating and exciting sport.

SOME STRAIGHT TALK, WITHOUT TALL TALES, ABOUT A MOST MISUNDERSTOOD ASPECT OF HANDGUN SHOOTING

Long-Range Handgunning

By JAMES D. MASON

Handgunning generally has been considered a short-range proposition. Surely, its main applications are well inside of fifty yards, twenty-five yards being considered loosely the threshold for long-range pistol marksmanship. Attempts to publicize the long-range capabilities of the handgun have been greeted with reactions ranging from tongue-in-cheek to convulsive guffaws as readers were helped back into their chairs, tears streaming down their faces. Everything from Jeff Cooper's three-inch, one hundred-yard groups to Elmer Keith's outhouse marksmanship and six hundred-yard elk has been lampooned to a point where "gun-shy" authors know better than to utter murmurs on this subject in public.

So, with this introduction, I intend to surmount the insurmountable. The intent here is not to broadcast individual claims or to debunk past writing; instead, this piece will deal with limitations and performances within observed experiences. The realities of this arcane skill need further exploring as handgunning rises in stature as a popular sport. Above all, I hope to challenge and encourage other shooters to test the limits of the handgun at long range; it is only in this way that development in a sport becomes meaningful.

First, what is meant by "long-range handgunning"? In general, anything beyond twenty-five yards; I prefer to establish fifty yards as the opener, since many organized pistol ranges provide this formal, measured distance. Beyond that range, we are dealing with the limitations of guns, loads, and human skills. All of these factors are variable, and so we have

Champion pistolero Bill McMillan completes a long yardage string with the favored Smith & Wesson Model 29.

the basis for developing and systematizing a technology, a kind of "science," of long-range pistolry.

Aside from the technical challenge of such a "science," growing use of handguns in the game field makes development of effective long-range skills a necessity for the polished handgun hunter. What is needed, then, to accomplish small groups and consistent hits with the "short gun" at extended ranges?

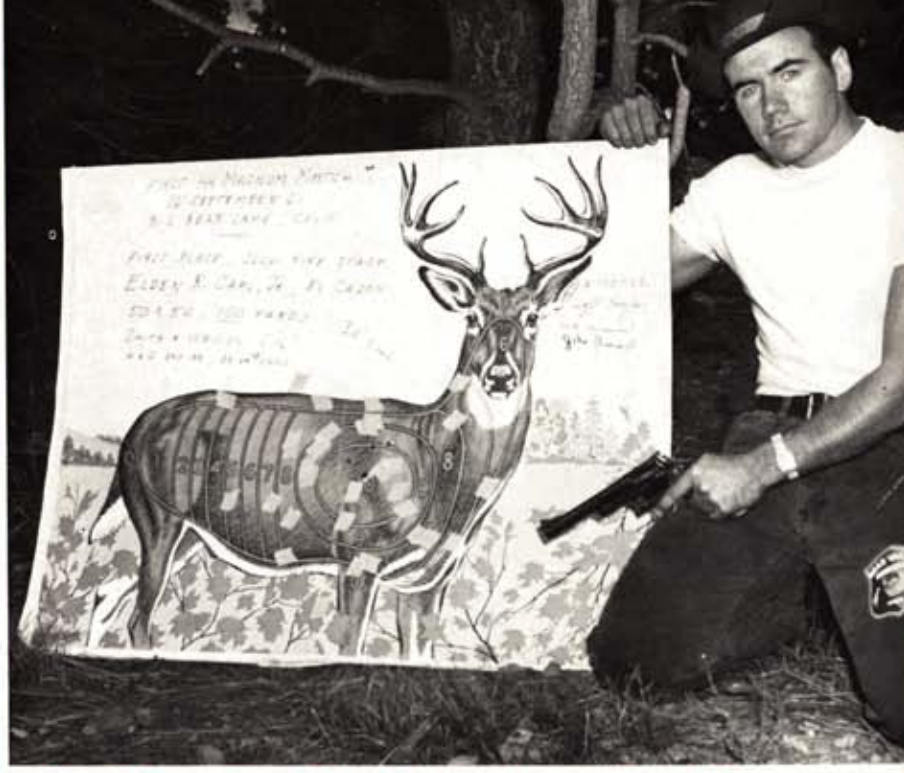
Prerequisite to long-range performance is a handgun capable of delivering the goods. In revolvers, inherent accuracy is demanded, since not a lot can be done to correct a really sour-shooting wheelgun. Expert pistolsmithing can correct many difficulties in lock timing and cylinder-to-bore alignment if a revolver is a mediocre shooter or just plain sloppy in fit. The gun and loads should shoot consistently inside of two and a half inches at fifty yards to perform credibly well at longer distances. Naturally, the smallest groups possible are most desirable. Understand that this kind of testing is done on a machine rest or by a skilled shooter supported on a bench; this way human factors are eliminated or absolutely minimized.

Single action shooting is called for except where specialized combat shooting stances are demanded. In the SA mode, trigger should break cleanly with minimal backlash and overtravel. Short lock time from a small hammer arc and full mainspring is mandated. An ideal long-range gun may not produce the very best combat DA pull in a revolver. Single shot handguns, such as the Thompson/Center Contender, are ideal for deliberate slow-fire shooting.

The question of appropriate barrel length and weight rises amid debates as to overall effectiveness of a long-range handgun. Theoretically, long barrels provide a more favorable sight base length to minimize sighting errors. However, long sight bases also magnify normal barrel movements, causing many shooters to overcompensate and "shake" more than they would using shorter barrels.

Middle-aged eyes have a hard time acquiring and maintaining critical sight pictures with longer barrels. While velocities are maximized for any given loads in a longer barrel, the gain in absolute velocity may not be critical. Longer barrels mean more weight and a more favorable recoil moment, especially when using heavy loads. Short barrels carry and handle more conveniently in the field, however.

For long-range shooting, I prefer long, heavy barrels, largely because of balance; the 7½- to 8⅜-inch tubes are best from this standpoint. Otherwise, 4- to 5-inch barrels may be preferred to 6-inch lengths, which always take some adaptation to shoot well for me. Tastes and preferences differ, and what suits the shooter best is the barrel length to choose. While I like long tubes, one of the most reliable long-range revolvers in my battery is a 2½-inch Model 19 that registers two-inch groups consistently at fifty yards with lead bullet handloads. If I do my part, the little gun delivers, which is a complete opposite to what "should" be expected from a snub-nose combat revolver.



Top PPC competitor Eldon Carl shot this magnificent 100 yard group back in 1961 using a hot-loaded .44 Magnum. This kind of shooting wins competitions and is a goal that every shooter with visions of being a long-range pistolero should aspire to. Note 6½" Model 29.

Long-range shooting of autopistols requires the Browning system, preferably the Colt Government Model, which can be given a full-house accuracy treatment to deliver 1½-inch groups at fifty yards. Done by a qualified pistolsmith, the accuracy can be obtained while minimizing the possibilities of functional failure.

Sights are an integral part of considerations for long-range shooting. Deep notch, wide ⅛-inch target type sights are preferred. When possible, obtain fine adjustable target micrometer rear sights such as the Bo-Mar or Colt Eliason models. Despite preferences to the contrary, a good smoked-black sight gives the best definition over most all light conditions and target colors. Red, blue, or yellow front sight blades have distinct advantages under certain known light conditions. White-outlined rear sights can produce glare in hard sunlight.

Mounting scopes on handguns gives several advantages at long range. Where the distance exceeds the eyes' resolving power, optical sights give the magnification and resolution to see the target precisely. For middle-aged eyes, accommodational problems are eliminated by bringing reticle and target image into the same optical plane. Small movements of the gun are magnified so a measure of shooting control can be seen

An almost unbelievable 11/16" group of three shots at 100 yds. was fired by Eldon Carl into the side of a corrugated carton.

This experimental hour-glass target may help long-range handgunners wring an extra bit of precision from their shooting

in the scope sight image. This may upset untrained scope users, however, and cause them to have "purpose tremors," that is, overcompensation for gun movement that would not be perceived except for the scope magnification. Scopes on handguns are cumbersome, and the long eye relief of pistol optics reduces the field of view of a sight considerably. Targets are harder to acquire and track with a pistol scope, and hunting handgunners cannot always count on game's standing in one place. Scopes on the big, hard recoiling magnums are subject to damage and must be mounted rigidly to give satisfactory service. Many owners of heavy caliber handguns epoxy sight mounts to the frame of the pistol.

Loads for long-range shooting must be prepared or selected from commercial ammunition that performs well in a given pistol. For the hunting handgun, this calls for jacketed ammunition of relatively full capacity loadings. Caliber must be chosen for the job at hand, although any of the "big three" magnums (.357, .41, or .44) fill the bill for general purpose long-range shooting.

Most experienced shooters go for the big-frame S&W Model 29 in .44 Magnum. Its power is undisputed, and it has outstanding accuracy with broad-scaled loading performance. Single action buffs will find renewed ballistic potential from an old, perennial favorite, the .45 Long Colt. Ruger's chambering of this venerable veteran on the big Blackhawk frame allows for magnum performance from this big-bore cartridge. Careful loading in the rugged Ruger single action revolver yields safe performance never dreamed of with the Peacemaker/-SAA style Colts.

The large variety of fine bullets available in .357 makes that magnum a natural, especially for shooters who do not want to handle the heavier big bores. Killing power for use on game will vary with the species and firing range. Based on sheer popularity, the .357 Magnum is easily the most recommended cartridge usable for handgunning afield.

The author's favorite all-purpose field cartridge is the .41 Magnum. This round can be loaded efficiently to any energy level within its potential. It does not have the variety of bullets that are available for the .357 or .44 bores, but the designs that are marketed currently are of high quality. In the hail of "macho" .44 Magnum publicity, the virtues of the .41 have been grossly played down.

Most commentators have written off this companion big-bore as being merely fifteen percent inferior in power to the .44. But at longer ranges with comparable bullet weights to .44 caliber rounds, the .41 retains energy to deliver equivalent terminal results at longer ranges. Penetration with the smaller diameter bullet is also superior on game animals when the same bullet weight is used. The .41 case size-to-bore relationship is ideal for a wide variety of propellants, and this cartridge groups inherently well. Power can be adjusted from .357 mid-range levels up to practical .44 Magnum loadings. This latter claim is possible, since with comparable bullet sectional densities and load levels, recoil moments are more manageable in the .41 Magnum.

Quality reloads, carefully assembled and tailored to the gun, will exploit the full potential of a fine handgun. Knowledge of load velocities and impact points and of windrift downrange will aid in getting the most accurate performance and registered hits from a long-range handgun. Poor quality ammunition is responsible for much inaccuracy downrange, which tends to limit the handgun to performances inside of twenty-five yards in the mind of the average shooter. Careful weighing of bullets, proper sizing and lubrication, hardness of the lead alloy material for cast bullets, weighing of all powder charges, consistent seating and crimping, selection and seating of primers, must all

.44 MAGNUM HANDLOADS

	MV (fps)	Variance (fps)	Nominal Groups (inches c. to c.)
22 gr 296			
8 3/8"	1293	20	4.50
6 1/2"	1226	38	4.50
22 gr H-110			
8 3/8"	1339	18	2.38
6 1/2"	1326	21	3.25
18 gr 630			
8 3/8"	1321	12	8.00
6 1/2"	1313	17	3.75
15.5 gr Blue Dot			
8 3/8"	1336	17	6.00
6 1/2"	1303	30	5.50
13 gr Herco			
8 3/8"	1301	22	2.13
6 1/2"	1320	13	5.50
16 gr AL-8			
8 3/8"	1255	35	3.25
6 1/2"	1187	6	2.50
16 gr N2020			
8 3/8"	1257	21	4.75
6 1/2"	1238	15	5.25
11 gr Unique			
8 3/8"	1231	6	2.62
6 1/2"	1220	18	2.75
15 gr AL-7			
8 3/8"	1342	19	4.50
6 1/2"	1310	14	3.75
22 gr 4227			
8 3/8"	1281	24	4.00
6 1/2"	1226	35	2.50
13 gr HS-6			
8 3/8"	1228	35	5.25
6 1/2"	1174	37	4.50

**All loads used H&G 230-grain bevel-base SWC cast wheel weight lead bullets, W-W cases and primers. S&W Revolvers were shot off of a sandbag rest at 50 yards. Data taken from Oehler 1161 chronograph, average of 3 rounds per group.*

receive detailed attention.

Magnum cartridges are recommended, since their power potential will produce flatter trajectories compared to other more standard cartridges (e.g., .38 Special, .44 Special). This fact is especially true when the big cases are loaded down slightly for most consistent accuracy. This does not rule out standard cases that demand somewhat better range judgment to compensate for rainbow trajectories. The ultimate in pistol performance can be obtained from the XP-100 in .221 Fireball, which performs like a little rifle. There is no real comparison here, since the XP-100 and similar handguns are hybrid to a point that demands a special discussion. Our concern here is with conventional pistols and ammunition configurations.

Furthermore, because of practical limitations in exterior ballistics of handgun cartridges (muzzle velocities and related poor ballistic coefficients of projectiles) and the resolving power of rather coarse patridge sighting equipment (or low-powered scope sights) (not to mention marginal human capacities), we find 100 to 150 yards as the extreme formal shooting ranges for pistols. (Again, with scoped and conditioned XP-100 pistols, these ranges can go to 225 yards for varmints). The amount of suitable game found within these limited ranges is great where hunting or field conditions favor the use of the handgun. Extreme ranges out to 500 yards provide entertainment and recreation, but should be confined to shooting games and experiments rather than serious hunting afield.

This H&G bevel base semi-wadcutter shoots consistently well in nearly all .44 sixguns. Cast hard, sized .001 over groove diameter and properly lubed, this one is a winner.

The big, N-frame S&W Model 29 handles most requirements for long range handgunning. Its steadying weight and good handling make it a top choice.

Within these limitations, very satisfying results are possible after developing effective long-range pistol techniques. A so-called "sixth sense" evolves with savvy handgunners; strong motivations and senses develop where the "feel" of the gun gives a feedback that registers smaller groups. While seemingly this borders on the occult, it is entirely possible for an experienced shooter to "think" smaller groups. Elden Carl (one of the top grade PPC shooters) registered an astounding sighting group that measured 11/16ths-inches at one hundred yards. While this kind of accuracy exceeds the potential of the gun, it is an example of the human extension that can develop when the shooter and the gun function as one unit.

Sighting for most long-range hits is best done on area targets rather than regular bullseyes. Formal, round shapes tend to distract shooters, making them overly self-conscious during the sighting phase of the shot. The best concentration for good long-range hits is to perceive the center of the target area and to hold consistently for that mark.

Since many long-range pistol shooters will be using the .44 Magnum, a survey of loads using the H&G 230-grain bevel-based bullet was run in both 8⅜-inch and 6½-inch Model 29 S&W revolvers. The accompanying data tables show the results on fifty yard targets fired from a sandbag rest. From out of this data, a single load was chosen and fired in the 6½-inch gun.

The most consistent performing loads of the series used H-110 powder, although comparable results were produced by AL-8 and Herco. The H-110 load was standardized for further testing. The Winchester-Western large pistol primers seemed to provide ample ignition for this hard-to-burn spherical powder; no unburned granules were observed in the barrel, and low velocity variances indicated uniform ignition. Past experience indicates magnum primers reduce accuracy slightly.

Data in Table I should be used as a guide, since results will vary from gun to gun and even from day to day with many loads. While a given powder did not produce the most acceptable results in the test gun, that particular combination may be just the ticket in another revolver. Small variations in powder weight, of as little as one or two tenths grain weight, can have beneficial results in specific handguns. Conversely, a good test gun loading may be mediocre in another arm.

All loads are designed to deliver a working maximum energy for the Model 29 S&W. Hotter loads are possible, but they do not provide optimum performance. What is gained in energy is lost in handgun longevity and accuracy. These loads will fatigue an experienced handgunner inside of twenty rounds; after that time, group sizes will increase noticeably. At around 1300 feet per second, a .44 caliber 230/240-grain bullet is doing about what it was designed to do. I shall never put hotter loads in my prized .44 for a steady diet.

No leading was observed in either test gun, a factor indicating load efficiency and reflecting the effects of bevel-based bullet design. The beginning of leading is a good rule of thumb for judging effective load levels. In order to appreciate sensible, serviceable load developments, one needs only to see a fine revolver after the ravages of several hundred super-zapper "space age" reloads, with open headspace, timing problems, and loose barrel journals.

It is interesting to observe the relatively small velocity differences from the long barrel in the Model 29. Usually, the bigger the bore, the less velocity gain from barrels over six inches. Gun balance and more favorable recoil moments are the most rational reasons to go to the long tube.

The absence of 2400 from the powder list will be noted by some *aficionados* of

(Continued on page 63)

GUNSITE RAVEN

By MASON WILLIAMS

When we read *The Indian Fighting Army, Crazy Horse and Custer, The King Ranch* by Tom Lea and other basically correct histories of the American west, one single fact emerges. The men who won the west were not very good shots. It is true that their weapons at the beginning lacked reliability. Black powder and caps often proved frustratingly capricious. But later on during the 1870's and 1900's firearms had become quite reliable. One is constantly reminded that 30 or 40 or even more antagonists could spend an afternoon and night potting away at each other with the result that, if evenly matched, one man might be wounded and perhaps a horse or two was

Jeff Cooper: filling the need for qualified combat pistol instruction.

shot. All this with an expenditure of hundreds of rounds of ammunition. Nowhere in any of the myriads of books I have read have I ever come across any reference to firearms training.

Men in those days learned to handle firearms by trial and error. If they lived through the first few years they could be assumed to be good gun handlers. Training was virtually unheard of. Very few men wanted to learn gun handling badly enough to spend time and money shooting and shooting until they became relatively efficient in the use of handguns. The shotgun has long been a basic defensive weapon. Captain King of the King Ranch seldom carried a handgun during the years of fighting off bandits, criminals and Mexicans. He carried a shotgun—a most efficient weapon whose use he had learned over a period of years. Like most people in those days he depended upon personal experience as a teacher.

Students receive expert tutelage under the watchful eye of Jeff and his small, but expert staff.

As years passed and this country moved into the 20th century and the west settled down after the First World War, we discover that match target shooting grew in leaps and bounds. The romance of the west was incorporated into formal target shooting. The Army was limited to garrison duty and it opened its ranges and facilities to the civilians so that a great age of civilian shooting prospered, backed by the Army and the Director of Civilian Marksmanship. Match target shooting became a national sport with factory representatives attending all major matches. Medals and trophies found their way into a large percentage of American homes.

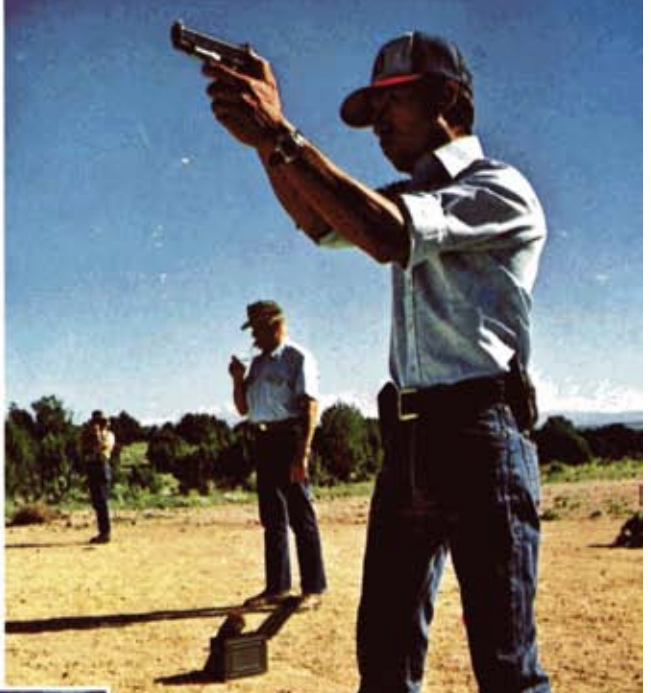
Instruction in match target shooting could be obtained from NRA instructors and from the many top shooters in local clubs. Nearly every community had its shooting club. And yet during those halcyon days of the early 1900's up through the advent of the Second World War I cannot recall hearing of any practical training schools. True, Ed McGivern ran a school that covered such things as fast draw, aerial shooting, long range firing but few people knew of it and he drew his students from a small segment of the shooting game. Unfortunately, far too many shooters believed that a fine match shooter could handle all shooting problems. This thinking has held its advocates up to today with a rationale that upsets the professional. These people appear to believe that shooting is shooting. This is not true. There are many phases to the shooting game that include plinking, hunting, match shooting, international match shooting, combat shooting, the PPC/TRC, and finally selective defensive shooting. The latter is still largely misunderstood today. It is as if a fine small bore, five position urban rifle shooter were to suddenly be transported to the western mountains, be handed a .300 Winchester Magnum and told to climb a 7,000 foot mountain and cruise the top at five in the morning to seek out, track and kill an elk. Such absurdity is typical of people who claim that shooting is shooting. And yet there has been almost no attempt to uncover those people who understand the empirical principles of shooting and ask them to set up and design training programs that deal in realities. Here and there some person has tried to change the course of events but in far too many in-

stances he has lacked sufficient in-depth experience or the facilities with which to train personnel.

California spawned the Southwest Combat League after the Second World War. The League included a large number of handgun shooters who wanted to know what could be done with a handgun and then they set up guide lines to judge the individual capabilities of each shooter. A man came, shot, watched, listened, asked questions and profitted thereby. Within the Southwest Pistol League were men like Ron Lerch, Ray Chapman, Jeff Cooper and others who were intensely interested in discovering what could be done with a handgun. Over the years courses of fire developed that taxed a man's ability to handle a handgun. Then came the change from the revolver to the pistol. But still no school.

In the meantime, an insidious evil had flung crime at the citizen, an evil that proved to be unreasoning in the attacks, killings, mutilations and problems that arose to plague the decent American. People turned to attack dogs, Kung Fu, Karate,

(Continued on page 67)



The Cooper course concentrates on the effective use of handguns under conditions of strain and physical exertion. Speed, accuracy and judgment are stressed. The student must respond quickly and decisively to a wide range of combat emergency conditions yet have the cool to hold his fire in a surprise 'no shoot' situation.

HANDGUN PROFILE

BROWNING'S BRAWNY

Three Feature Length Articles Explore

John Browning's Pioneering Designs

Handgunning with the HI-POWER

Handloading for the Big Browning 9 mm

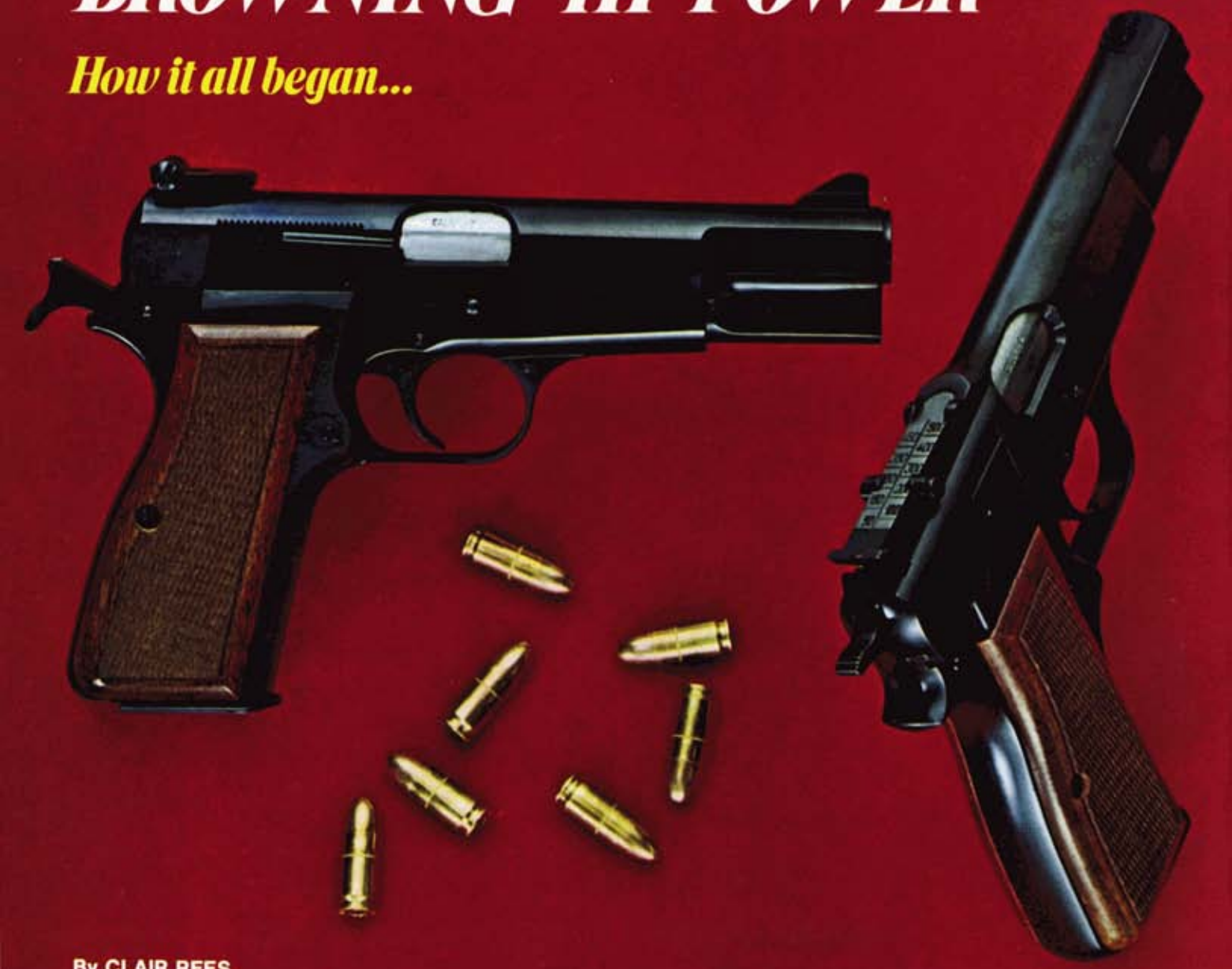
HI-POWER

John Browning's last auto pistol design has been hailed by many as also being his finest. No other handgun has been as widely adopted among the free world's police and military organizations, and few have been noted that are as dependable and trouble free. In the following pages, the history and development, practical handling and uses and specialized reloading aspects of the Hi-Power will be closely examined. We trust that our readers will find the information useful and entertaining handgun reading. —The Editors

COLOR PHOTO BY JOHN HANUSIN

THE BROWNING HI-POWER

How it all began...



By CLAIR REES

John Moses Browning completed his first prototype of an automatic pistol in 1895. This was a gas-operated .38 caliber handgun that was test fired by Colt officials that same year, and Colt subsequently purchased production rights to the gun.

This first semi-automatic pistol was never commercially produced—primarily because Browning's prolific genius produced an improved design using the blow-back principle before the year was over. In fact, Browning completed three *additional* new designs before Colt's Patent Firearms Company finally selected the one that was to become the first commercially produced selfloading pistol in America. This design was submitted to Colt June 29, 1896, and was introduced to the buying public in February, 1900.

But it wasn't until 1905 that Browning invented the auto pistol that was to help set the stage for the worldwide acceptance of semi-automatic handguns for military use, and indirectly create the demand for Browning's last—and probably finest—pistol design: the 9mm Browning Hi-Power.

The gun invented in 1905 was adopted by the United States Government in 1911, and became the famous Government .45 Caliber Automatic Model 1911 still in use today (in somewhat modified form) by U.S. military forces. Nearly a half million model 1911's were produced during World War I.

Before the end of that war, other countries were also using various auto pistols of Browning design. A few governments were favorably impressed with the apparent superiority selfload-

Browning pistols courtesy of Bill Barton's Sports Center, Niles, Illinois.
John Hanusin photo.

ing pistols demonstrated over the revolvers then in use, and in 1923, the French Ministry of War let it be known that it was interested in the development of an automatic pistol chambering the 9mm Parabellum cartridge.

Browning went to work, and had two new models ready for testing within a few short months. The first utilized a blow-back design, and was never patented or produced. The second was a short-recoil type—a U.S. patent application was filed for this design on June 28, 1923, and the gun was first marketed in 1935. It was to be Browning's last pistol design—the patent was issued in February, 1927, three months after his death.

Although French military forces never officially adopted the new sidearm, other countries were quick to recognize the superiority of its design. Over the years the Browning Hi-Power (also known as the Browning Model 1935) has been used as a service pistol by Belgium, Denmark, Canada, the United Kingdom, Lithuania, Rumania, the Netherlands, Nationalist China and other nations. While Germany occupied Belgium during World War II, many of these guns were manufactured for use by German forces. The French government *did* purchase some of the FN-made Brownings at the time the gun was introduced, but these guns saw only limited use by French Colonial Troops.

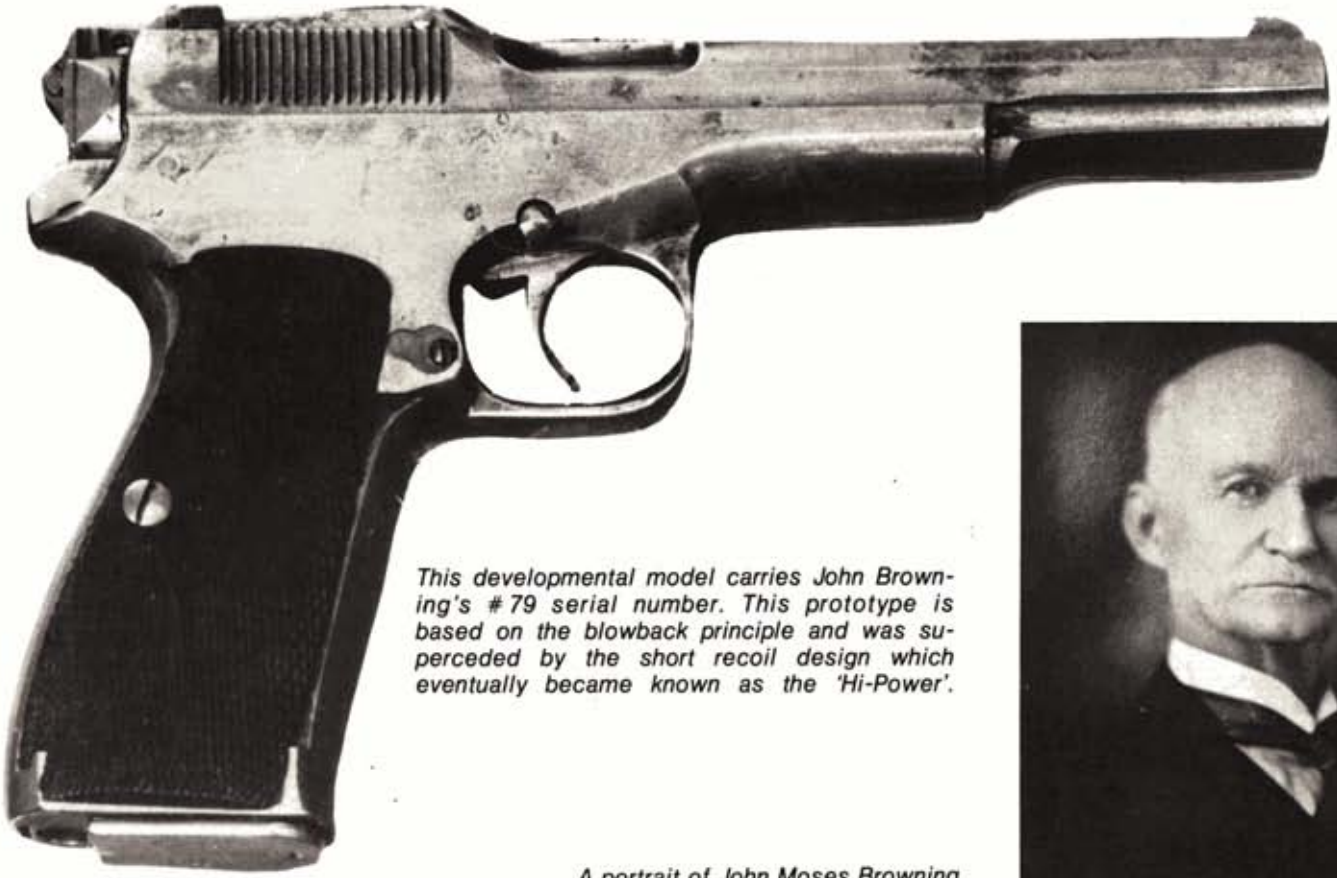
The original catalog for the 9mm Browning High Power, printed in March 1935, contained a lengthy introduction touting autoloading pistols, and the new Browning design in particular. It began by pointing out that "The Great War of 1914-1918 has definitely proved the necessity for the adoption of the automatic system for small arms . . ." and repeatedly downgraded competing revolvers with statements like, "Some Powers had no automatic pistol in their Armaments, yet as soon as circumstances permitted a change, they ceased using revolvers as service weapons . . ." and "This kind of weapon (revolvers) is now obsolete because its defects have been unanimously recognized . . ."

The catalog then listed the condition an ideal service handgun should fulfill: "Its weight must not be above 1 kilog.; it should be compact and not bulky; it must be well shaped to the hand and take a great number of cartridges . . . Its stopping power must be sufficient to kill a man at 50 m. . . ." Other conditions mentioned included items like, "The pistol should preferably be of the bolted type so as to prevent any possible danger from the existence of a still high pressure of powder gas when the bullet leaves the barrel and the breech opens . . . a cocking indicator is generally required . . . the weapon must remain open when the last cartridge in the magazine has been fired . . . dismantling and reassembling should be simple and easy without the aid of tools," along with several other attributes.

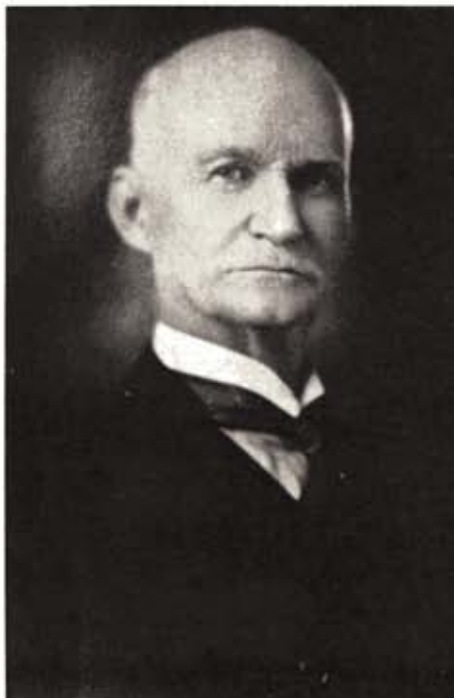
The introduction concludes with the following bit of public relations puffery, which would have undoubtedly embarrassed the typically modest inventor, had he still been alive:

> At the request of the Fabrique Nationale d'Armes de Guerre, the famous inventor John Browning, who may be called "the Father of Automatic Pistols" because it was really he who conceived the first simple and perfectly reliable models, crowned the incomparable series of his creations, not long before his death at Herstal, with a 9 m/m. pistol holding 13 cartridges, which meets all the requirements of the most severe specifications, as may be seen on examining the characteristics given on the following pages.

Actually, the original design of the High Power featured a 15-round magazine, giving the gun a capacity of 16 rounds if the



This developmental model carries John Browning's #79 serial number. This prototype is based on the blowback principle and was superceded by the short recoil design which eventually became known as the 'Hi-Power'.



A portrait of John Moses Browning.

The first factory model of the Hi-Power carries serial number 81. This gun was produced in the F.N. Model Shop and was one of the actual models tested by the French Government which did not adopt the then new Browning short recoil gun.

This Canadian-made Inglis Military model features tangent rear sight regulated to 500 meters. The backstrap is milled to accept the holster/shoulder stock. Below, the High-Power holstered in the wooden shoulder stock option.

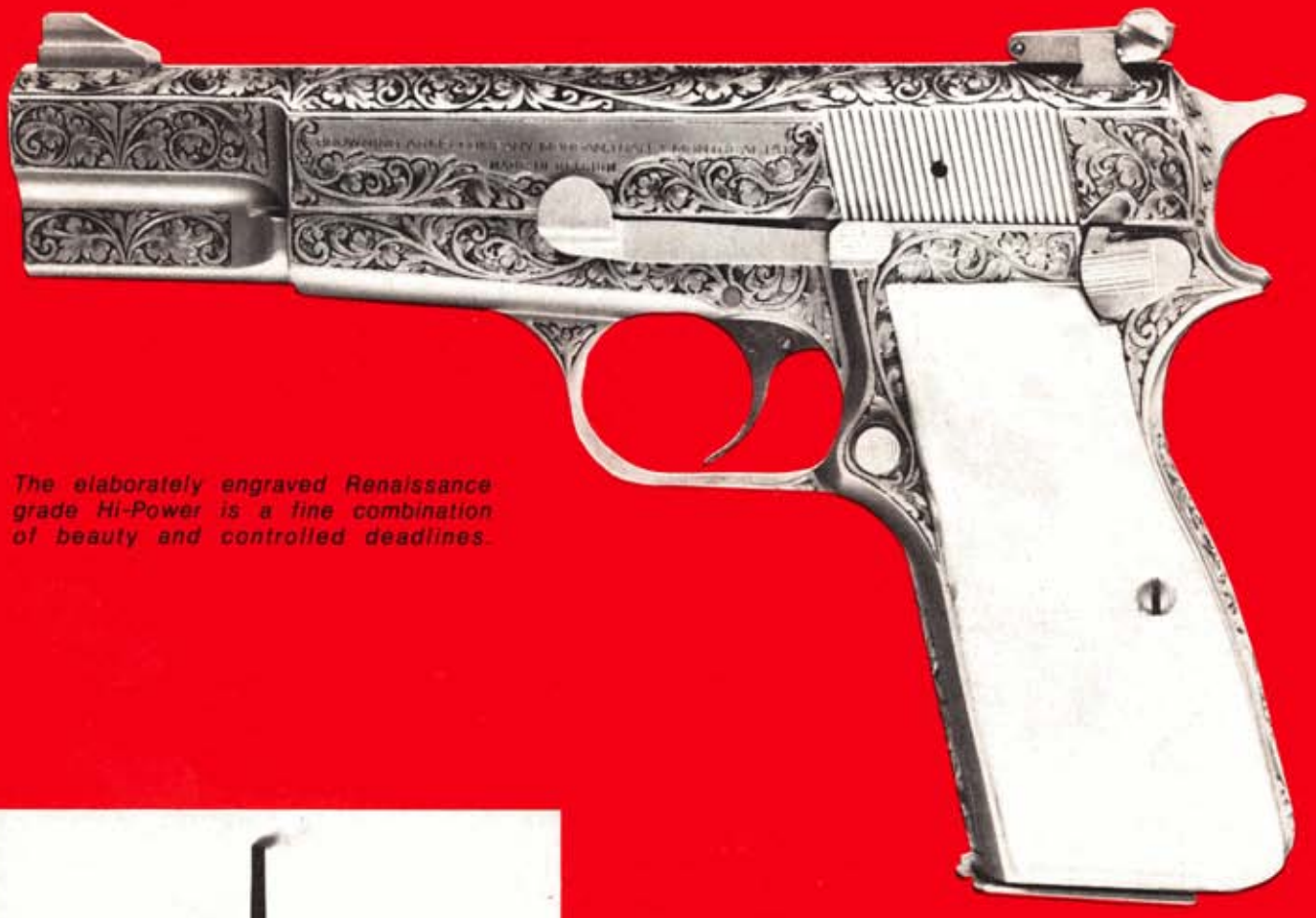
chamber was loaded separately. Before the gun went into production, however, its magazine capacity was reduced by two rounds to make for a lighter, slightly more compact weapon.

An external hammer was also added, and this final version was manufactured by Fabrique Nationale beginning in early 1935. While FN has been the primary manufacturer and supplier of this popular pistol, it is interesting to note that more than 200,000 were produced by the John Inglis Company in Canada during World War II for Canadian and Chinese Nationalist troops.

The Canadian government has adopted the Browning Hi-Power as the official sidearm for its military forces, and this version is still manufactured in Canada. After WW II, tests were conducted among a number of handgun designs before Canada made the decision to stick with the Browning, and the Browning won out. Included in the tests was a lightweight version of the Browning design, featuring weight-saving cuts on both sides of the slide. However, it was decided that the standard model would be adopted, as the small saving in weight would require costly retooling and would make already available stocks obso lescent.

When the Hi-Power was introduced in 1935, it was made available in two distinct forms: a fixed sight "Ordinary Model," and an "Adjustable Rear Sight Model" with sights graduated to a full 500 meters. This latter model also featured a slotted grip to allow the use of a wooden shoulder stock. This accessory stock was attached to a leather holster.

The early Brownings made for Canadian use also could be used with a detachable shoulder stock, but the stocks furnished with these guns were combination affairs that doubled as holsters. Two different versions of this particular gun were made, known as the "Pistol, Browning, FN, 9mm, HP, No. 1 Mark 1," and "Pistol, Browning, FN, 9mm, HP, No. 1 Mark 1*." The



The elaborately engraved Renaissance grade Hi-Power is a fine combination of beauty and controlled deadlines.

The Fabrique Nationale plant as it appeared when the first Hi-Powers came off the assembly lines.

asterisk designates a version with a higher ejector, and a modified extractor. A "No. 2 Mark 1" version was also made—this issue had fixed sights, and was not machined to accommodate a shoulder stock.

Some Hi-Powers made in Belgium during the German occupation were produced without magazine safeties, and I've seen extension magazines capable of holding up to 30 rounds that were carried by some German officers.

While 9mm Browning Hi-Powers were an immediate success in Europe, Browning didn't begin importing this model for sale in the United States until 1954. The gun was available with fixed sights only until 1972, when a version with fully adjustable target-type sights was also offered. For fine gun fanciers, a highly engraved "Renaissance" version can also be had. Prices for the fixed-sight "standard" Hi-Power are $272.95, while the fully engraved Renaissance number sells for nine hundred dollars

The Browning Hi-Power, designed more than a half century ago, is still regarded as an excellent, up-to-date autoloading handgun. Its barrel locking system is a real improvement over earlier designs, as it eliminates the swinging link and pin used in the 1911 model. Instead, it incorporates a cam to unlock the barrel from the slide—this makes for a more rigid barrel support system that still retains basic rib-and-groove Browning locking principle. The Hi-Power also uses a simplified recoil spring arrangement.

The slide is also an improvement over earlier Browning designs—except for a single opening to accommodate the barrel, the front of the slide is solid, and no barrel bushing is needed.

John Moses Browning's last handgun design is, by all accounts, still one of the very finest available.

The Hi-Power represents a good compromise of power, size, dependability and more than adequate firepower. Right, a field-stripped view; far right, a tangent sighted Hi-Power is shown during a firing sequence.

SHOOTING BROWNING'S HI-POWER

By CLAIR REES

Chambered for the 9mm Luger or Parabellum cartridge, adopted almost universally by countries other than the United States for serious social use, the Browning Hi-Power is the official military sidearm of most NATO nations. Britain, Belgium, Nationalist China, Denmark, Holland and Canada have all made the Browning standard issue among their peace-keeping forces, and the gun sees wide usage in many other countries.

Many American cops also favor the big Browning, carrying it either on or off duty, depending on what their own departmental regulations allow.

One of its big attractions is its cavernous 14-round capacity (13 in the magazine, plus one up the spout). Of the 9mm models currently available, only the 15-shot Smith & Wesson M-59 offers greater firepower. The ability to fire fourteen times without reloading can be a real plus in a combat situation, and this has undoubtedly served to endear the Browning Hi-Power to many who must pack a pistol as part of their daily business routine.

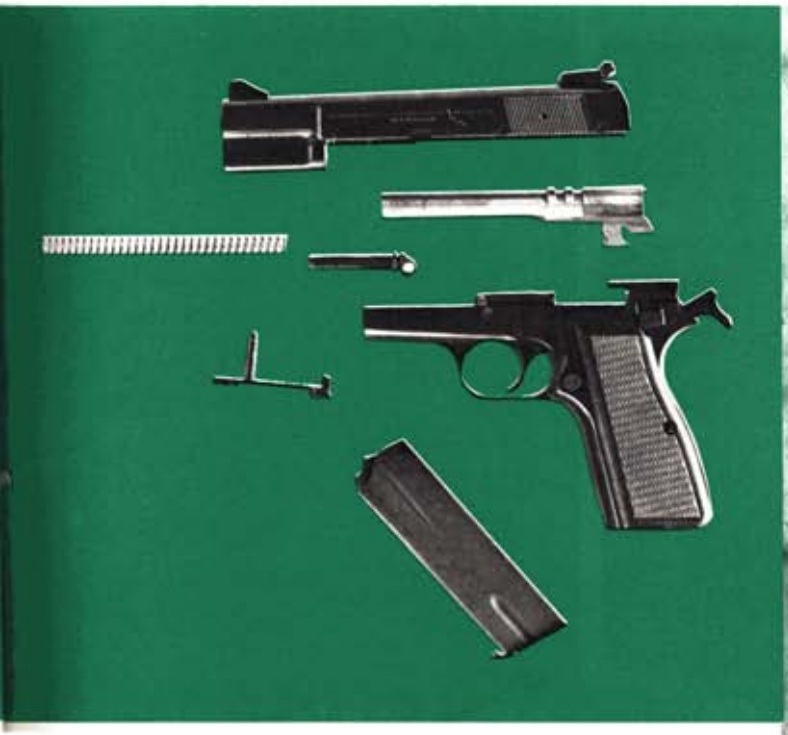
Another big plus is the fact that the Browning 9mm can be carried safely until it's ready for use. Although it lacks the grip safety incorporated by Browning in the .45-caliber 1911 governmental model, the Browning Hi-Power remains one of the safest selfloaders you can tote. (As a matter of improved self-preservation, many 1911 devotees pin the grip safeties on their guns to render this device inoperable. Few knowledgeable gunners mourn the lack of this additional "safety" on the Browning.)

Actually, the Browning Hi-Power features several safety devices. The primary safety is a manually operated thumb lever located on the left side of the frame, at the upper rear of the left

grip panel. When engaged, this positively blocks the sear and prevents the gun from firing.

This safety is "on" in its upmost position, and is disengaged by moving downward with the right thumb as the gun is raised to firing position. The first few times I used one of these 9mm's, I thought the safety lever's surface area was critically small, and that the whole mechanism was placed too far to the rear. However, I soon learned to roll the *joint* of my thumb across the 13/32-inch-wide lever, and in a fast-draw situation I hit the safety even farther back along the digit. In actual practice, the Browning's safety turns out to fast and easy to operate.

The gun also features a magazine safety, which makes it impossible to fire a round in the chamber unless the magazine is in place. This is a spring-loaded device fitted to the rear of the trigger assembly—when the magazine is removed from its well in the butt, the device springs backward into the resulting cavity, and pushes the trigger lever away from the sear. Opinions are mixed as to the desirability of having a magazine safety on a combat weapon. Such a safety feature can prevent accidental discharge of a "forgotton" round, but it also renders the gun inoperative while changing magazines. Too, if you should lose your only magazine, you would be unable to fire the gun.



The Browning Hi-Power has an exposed hammer that can be cocked manually by thumb pressure, or by racking the slide. As the gun features a rebounding firing pin that does *not* press against the cartridge primer when the hammer is fully forward, you can safely carry the gun uncocked with a shell ready to go in the chamber. Even a hard blow on the back of the hammer can't cause the gun to fire unless it has been cocked first. If you opt to

carry your Browning in this state of readiness, You'll leave the manual safety on the "off safe" position (as a matter of fact you cannot engage this safety when the hammer is down), and thumb cock the piece when it is drawn.

This procedure is slower and more awkward than simply thumbing the safety off from a "condition 1" readiness, but some shooters simply don't like to carry their guns cocked and locked.

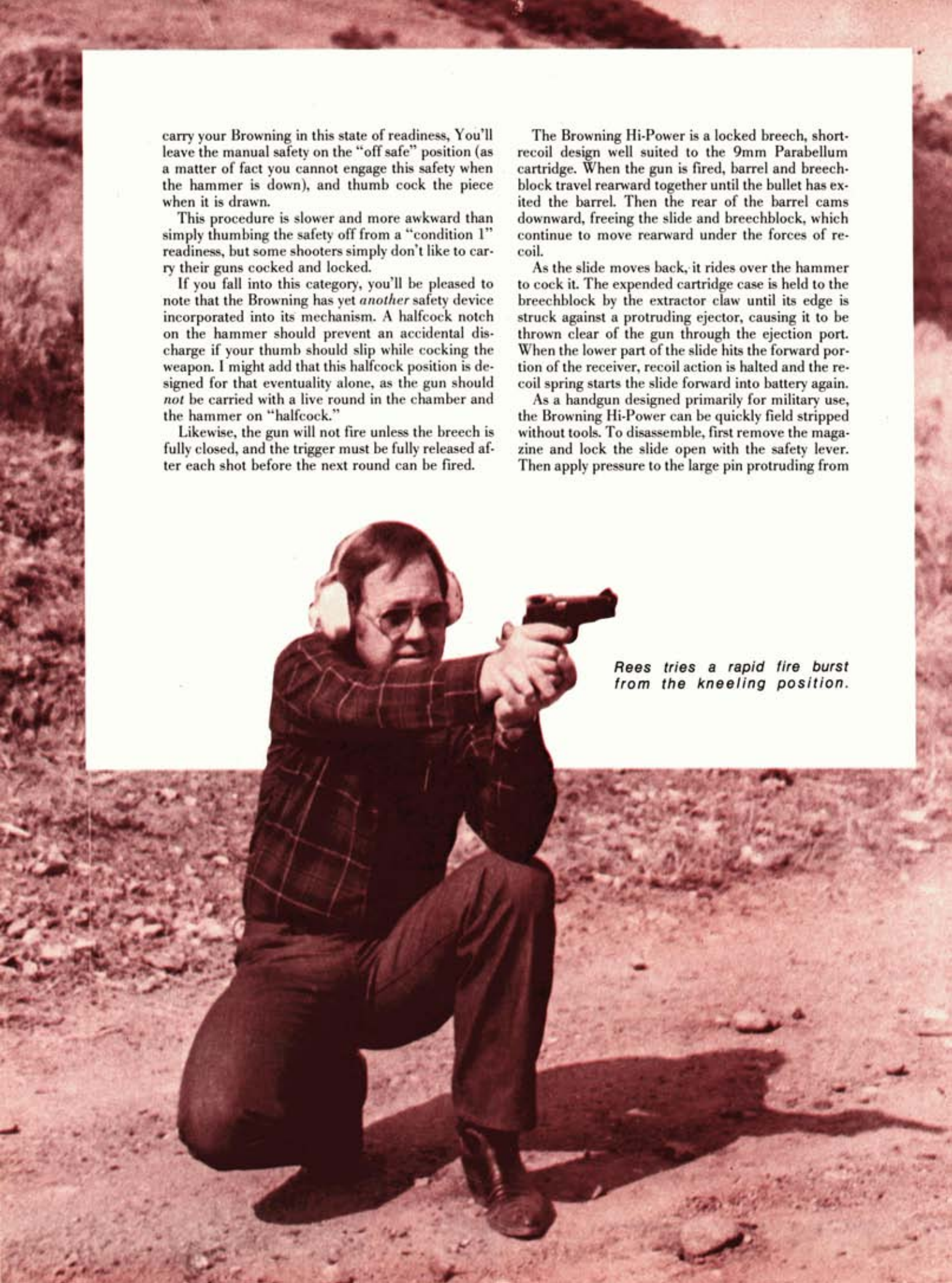
If you fall into this category, you'll be pleased to note that the Browning has yet *another* safety device incorporated into its mechanism. A halfcock notch on the hammer should prevent an accidental discharge if your thumb should slip while cocking the weapon. I might add that this halfcock position is designed for that eventuality alone, as the gun should *not* be carried with a live round in the chamber and the hammer on "halfcock."

Likewise, the gun will not fire unless the breech is fully closed, and the trigger must be fully released after each shot before the next round can be fired.

The Browning Hi-Power is a locked breech, short-recoil design well suited to the 9mm Parabellum cartridge. When the gun is fired, barrel and breechblock travel rearward together until the bullet has exited the barrel. Then the rear of the barrel cams downward, freeing the slide and breechblock, which continue to move rearward under the forces of recoil.

As the slide moves back, it rides over the hammer to cock it. The expended cartridge case is held to the breechblock by the extractor claw until its edge is struck against a protruding ejector, causing it to be thrown clear of the gun through the ejection port. When the lower part of the slide hits the forward portion of the receiver, recoil action is halted and the recoil spring starts the slide forward into battery again.

As a handgun designed primarily for military use, the Browning Hi-Power can be quickly field stripped without tools. To disassemble, first remove the magazine and lock the slide open with the safety lever. Then apply pressure to the large pin protruding from



Rees tries a rapid fire burst from the kneeling position.

Remington's potent 115 grain JHP loads produced fine combat accuracy in the P-35.

the right side of the frame above the trigger while simultaneously raising the slide stop lever on the left side. When the pin (which is actually the end of the slide stop pivot pin) is flush with the frame, pull outward on the slide stop lever to remove the assembly completely.

Hold the slide firmly with the left hand while you use the right thumb to lower the safety, and ease the slide forward off the receiver.

Note how the recoil spring guide is positioned against its stop in the slide (otherwise, you might possibly reassemble the weapon with the guide upside down), and then compress the spring and lift both the spring and its guide from the slide. Finally, remove the barrel. This is as far as you should go in disassembling the Browning unless you are a qualified gunsmith. No further disassembly is required for normal maintenance. Reassemble in reverse order.

Since 1972, Browning Hi-Powers have been available with adjustable target-type sights. Adjustable sights add $16 to the price of the gun, and in my opinion that represents a real bargain no handgunner should pass up. With movable sights, the Hi-Power retails for $288.95, while the fixed-sight versions sell for $272.95.

The optional sights, incidentally, are screw adjustable for both windage and elevation, and you won't need an extremely fine-bladed screwdriver to do the job. As a matter of fact, the twin windage adjustment screws are slotted large enough to accept the edge of a dime—or even a penny!

You can get an excellent, clearly defined sight picture, with sufficient light visible on both sides of the 1/8-inch wide front blade for good definition. Sight radius is an adequate 6-3/8 inches.

At 33 ounces (empty), the 9mm Browning is neither too heavy to carry on the belt all day, nor too light to be easily controllable. With a full load of 13 rounds staggered in its double column clip, the Browning makes a conforting handful, some 5-3/8 inches in diameter at its widest point. The grip panels are of checkered walnut to give a good, no-slip surface.

The trigger on the Browning I've been using recently takes 6 pounds pressure to drop the hammer—about what you would expect for a sidearm designed for military and police use. However, the letoff was much sharper and crisper than I've experienced on most other autoloading handguns—and this undoubtedly contributed to the gun's fine accuracy.

(Continued on page 62)

Reloading for the big Hi-Power 9mm

By GEORGE C. NONTE

Probably somewhere around 1900 the engineers at DWM, (Deutsche Waffenundmunition Fabrik) began toying with the idea of opening up the bottle-neck 7.65mm Parabellum (.30 Luger here) case to make a neat 9mm auto-pistol round. At that time D W M had begun making the M1900 Parabellum (Luger) pistol in 7.65mm as a result of George Luger's redesign of the ungainly, American-born Borchardt mechanism.

It may not have happened quite that way, but logically it should have. After all, the 7.65mm P. was a smallbore number, and there were plenty of larger-bullet pistol cartridges around to convince DWM the startling new design deserved one. Fortunately, the rimless 7.65mm case head was of such a diameter that straightening out the bottle-neck would accommodate a 9mm bullet—and, better yet, just the right amount of body taper was left to provide unusually good feeding and extraction. This probably wasn't realized at the time, but three-quarters of a century, millions of guns, and billions of cartridges have proven it to be true.

Just one fly in the Parabellum ointment: when a 9mm bullet of reasonable weight and proper shape for feeding was seated in the opened-up 7.65mm case, the resulting cartridge was too long for the magazine and recoil stroke of Luger's prodigy. With characteristic teutonic directness, the case was lopped off to a length of 0.754-inch, producing a cartridge length of 1.169 inch.

VOILA! The new number, being given DWM cartridge indentification number 480, clattered perfectly through the Luger pistol altered only by opening up the bore to 9mm and chambering to fit the 9x19mm case. Even the original magazine needed no alteration to feed the new round. The 1902 Parabellum was the first to be offered in the new caliber.

Thus was born the cartridge known the World over ever since as "9mm Luger". Of course, dozens of synonyms have been (and still are) applied to it, but none are as well known as those two.

Of course, the above is mainly conjecture. The development of the cartridge was probably much more formal, with reams of drawings, dozens of lengthy conferences, and a ferocious clacking of slide rules for benefit of high-level DWM executives, but I'll wager the pick and shovel work was done just as conjectured, exactly as gun-nut wildcatters do yet to-

day.

In any event, the result was a potent 9mm auto-pistol cartridge, driving a 124-grain full-metal-jacketed bullet as 1150 fps, producing 363 fp of energy at the muzzle. Not bad for 1902, and superior to the contemporary .38 Colt Auto (ACP).

In the opening years of the 20th Century the Imperial German Navy needed a new sidearm, as did the ground forces. The clumsy, black-powder revolvers they'd used for a quarter-century had become an anachronism. Not interested in the "tiny" .30 caliber bullet of the 7.65mm Parabellum, the Navy adopted the new "9mm Parabellum" cartridge in 1904; and, of course, the existing Parabellum/Luger pistol, as well.

The 9mm parabellum is the son of the smaller 7.65mm Luger round of 1902 vintage.

The 9mm cartridge was 'made'. In 1908 the German ground forces adopted it (simultaneously with the much-improved 1908 version of the Parabellum pistol, designated "P.08") and a legend was born. Since then, the 9mm Parabellum/Luger cartridge has probably been more widely produced and used than any other pistol round in the world. Today it is the standard pistol and submachine gun cartridge of practically every western hemisphere nation, except the U.S.A.

All this isn't to say that equally good (or better) cartridges of the same bullet diameter didn't exist—as, for example, the .38 ACP introduced *commercially* in 1900—but the German DWM product had luck and timing and promotion in its favor. It won out, and all the other 9mm auto-pistol rounds have been left far behind in its dust or have disappeared completely.

Virtually every full-size, military & police type pistol of today (excepting in the Soviet bloc) is chambered first for the 9mm Luger. Even the venerable U.S. M1911A1 .45 in commercial form has been adapted to this cartridge.

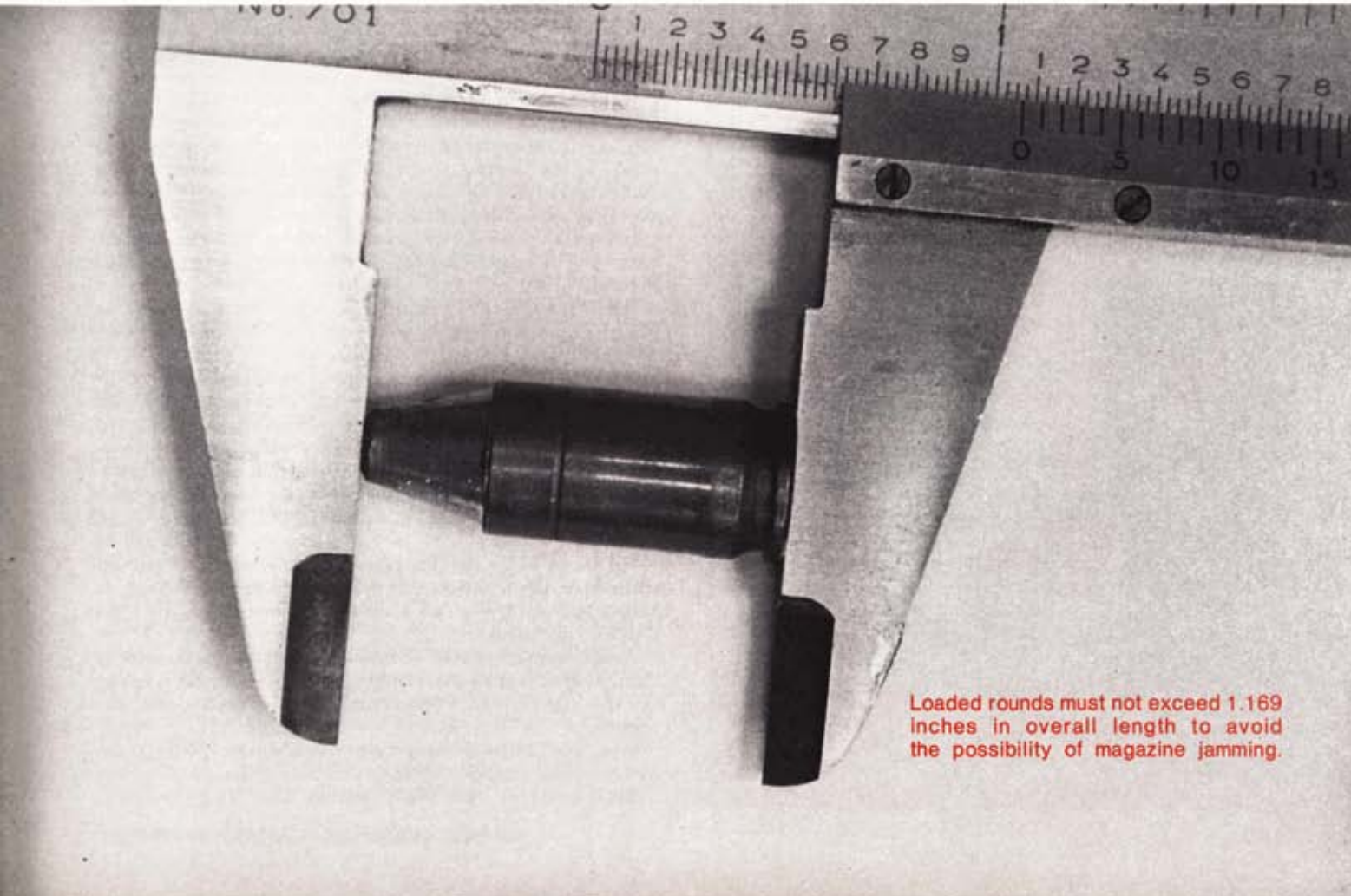
The Parabellum pistol and the 9mm cartridge became widely distributed through both civil and military channels, probably due more to aggressive German promotion efforts than the admitted excellence of the products themselves.

Among the dozens of pistols subsequently adapted to the 9mm P., 1935 saw the introduction of what we now know as the Browning High-Power. It has also been known as P.35, G.P., and a host of other synonyms. Designed by American arms genius John M. Browning before his death in 1926, the H.P. was developed and manufactured by the great Fabrique Nationale at Liege, Belgium. The H.P. has been made *almost* exclusively in 9mm P. caliber, and no one knows how many have come off the line since 1935. During German occupation of Belgium in WWII, hundreds of thousands of units were made for the Wehrmacht alone.

The H.P. pistol and the 9mm P. cartridge represent one of these uniquely perfect marriages of different elements—a marriage as uncommon among things mechanical as among people.

We really don't know who to thank for the cartridges, but the dean of American arms designers, J. M. Browning gave us the pistol, albeit from his grave.

When the cartridge (early in its life) came to be loaded here, it was logically (if incorrectly) designated "9mm Luger". More



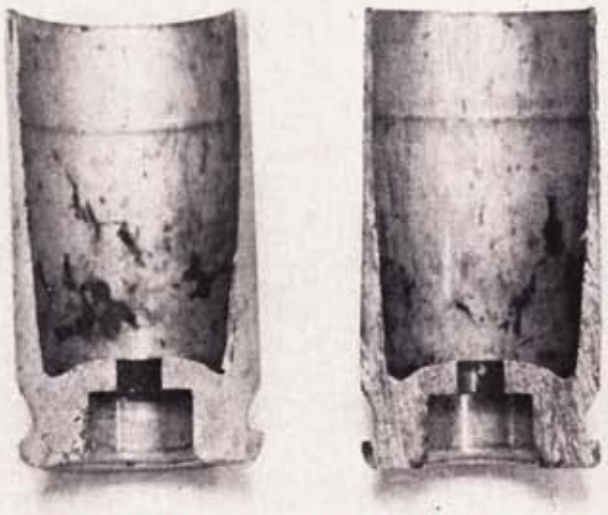
Loaded rounds must not exceed 1.169 inches in overall length to avoid the possibility of magazine jamming.

important, though, the case was redesigned for use with the standard U.S. small pistol primer of Boxer type, containing its own anvil. For all but the past few years the cartridge was made elsewhere with Berdan type primers which are a curse upon handloaders. The Boxer case, with its single, central flash hole about .080-inch in diameter makes reloading a breeze. And, it's handloading (reloading, if you prefer) this cartridge we want to discuss, after this lengthy, rambling preamble.

The 9mm P. was originally loaded with a 124-grain full-jacketed bullet, of truncated-cone form at a nominal velocity (100mm barrel) of 1150 fps. Since then there have been many variations of the so-called "Service" or "Ball" load. Bullets range from 100 grains to 125 grains and velocities from 1150 fps to about 1400 fps. This excludes the several WWII German light-bullet variations made necessary by shortages of lead and copper.

Thus, one class of load to be duplicated is the *service* or *ball* round.

Decapped cases show the difference between Boxer (Left) and Berdan (right) priming. The Berdan case will not accept U.S. Boxer primers.



Typical U.S., Boxer primed case in section.

A second load all will want is a cheaper version of the service load. It must have comparable ballistics, but with a low-cost, cast, lead bullet.

Then, the lads & gals concerned with blast and recoil, perhaps also with gun life, will want a lighter load with lead bullets. Generally, the load wanted is the lightest which will function the gun mechanism with 100-percent reliability.

Some shooters will want an even lighter load, for short-range work. This is quite possible, but only by accepting manual operation of the gun, or single-loading. The availability of a garage or basement range makes such a load desirable because of its very low report and limited penetration.

Last, but not least, is the class of load demanded for combat purposes, and to a lesser extent by the handgun hunter. Such loads must produce maximum live-target lethality and totally reliable functioning; often other characteristics will be traded-off to achieve those effects. Jacketed, expanding bullets (JSP, JHP) are necessary for such loads, of lighter than usual weight, and driven at the highest *safe* and *practical* velocity.

With our loading goals outlined—keeping in mind that they are intended primarily for use in the fine Browning H.P. pistol—let's look into the components, methods, and techniques of assembling really *good* ammunition.

It all begins with selection and preparation of cases, whether new, once-fired, or fired and of unknown history. First, unless you intend going to great lengths to use them, weed out all Berdan-primed cases. This can usually be done by glancing at the headstamp, but looking down the mouth to the inside of the head is more certain. One or more (usually two) small-diameter flashholes located off-center indicate a Berdan case. A relatively large, central hole indicates a Boxer case. All cases bearing U.S. markings are Boxer; including those made for military use and foreign countries.

Tumbling in ground nut-hulls is the best way to clean cases. I favor the tumblers and rouge-impregnated medium offered by J & G Rifle Ranch (Turner, Mont.). Tumbling in this medium cleans cases inside and out, leaving the exterior bright so that defects may be easily seen. Lacking a tumbler, wash cases thoroughly in *hot* water and detergent, rinse in boiling water, then allow to air-dry *completely*.

Inspect cases and reject any showing one or more of the following defects: primer leaks; loose or missing primers; head distortion; excessive bulge ahead of extractor grooves; splits or creaks at any location; deep pits caused by corrosion; heavily dented or crushed mouths; sharp-edged mouths resulting from previous, over-zealous deburring.

Beware of cases not of 9mm P. caliber; it's surprising the number of .380 and .38 cases one finds, especially in purchased fired cases.

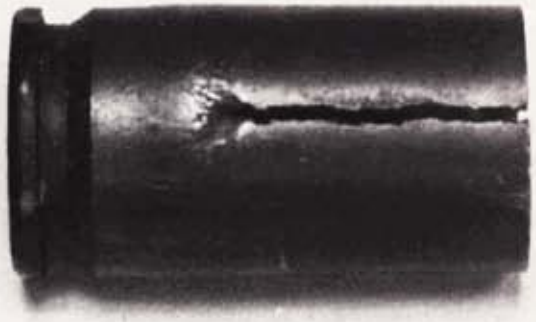
While inspecting for defects, segregate cases by make or headstamp. You'll be able to use them all, but for best results different makes shouldn't be mixed.

Resizing and decapping comes next. I prefer the type of die that decaps simultaneously with resizing, but leaves mouth expansion for later. The reason will be obvious as we go along. Ordinary hardened steel resizing dies of best quality are quite satisfactory—but a full-length tungsten-carbide die is almost impervious to wear and to the inadvertent damage that can so easily ruin an ordinary die. Blow the extra bucks for the best T-C die, and you'll not regret it.

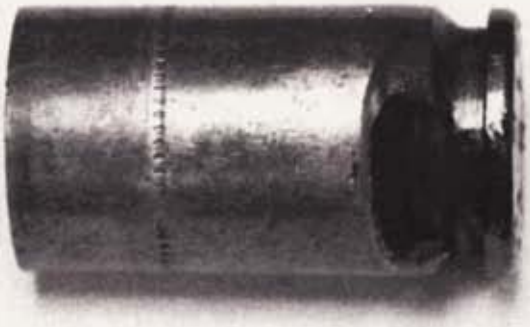
For sizing in a steel die, lubricate cases lightly by rubbing them in a towel moistened with case-sizing lube, STP, or anhydrous lanolin. With a T-C die no lubrication is required, but it will do no harm.

If cases were lubricated, after sizing and decapping, tumble to clean primer pockets and remove lubricant. Washing is an acceptable substitute, but won't remove primer residue from the pockets.

If you are hard to please and are especially concerned with accuracy, check cases for length at this time. Separate them into "short", "medium" and "long" groups. The "long" cases will



This WW II vintage case shows an obvious split. Some are not so apparent. Careful sorting of cases is always a must.



Defective case combined with excess pressure caused this blowout. Doubtful cases should always be discarded to avoid this.

give the most uniform ignition, thus accuracy, since the 9mm P. headspaces on the case mouth.

At this point, I prefer to expand the case mouths, using an expander plug *with decapping pin* which will pass through the flash hole to insure that no debris or tumbling medium is lodged there. Mouths should be expanded only to the depth to which the bullet will be seated; actually, about 1/32-inch less than this depth is better. The shallow shoulder left by the edge of the expander plug will provide a firm seat for the bullet later. The expander should also flare the case mouth *very* slightly—just enough to permit hand-starting a square-base lead bullet without shaving. More flare will reduce case life.

Few factory-made expander plugs will do all the above until they have been altered. In fact, it may be desirable to use different plugs for different bullets because of varying seating depths.

Cases are not ready for repriming. I much prefer to do this as a separate operation on a bench-type priming tool. Currently we are using two, the RCBS semi-auto unit and the SSK1 magazine-fed unit. Both work well and are quite rapid. Several hundred cases per hour can be primed easily. *Feel* primers in so the anvil contacts the bottom of the pocket. This will insure no primers protrude above the case head to cause a *slam-fire*, and also insures maximum consistency of primer ignition.

With cases prepared to this point, the rest of the loading job is a snap. Just decide what bullet and powder charge you'll use, and have at it. Actually, I prefer to process all my fired cases to this point as time and circumstances allow, then stow them away until I need to load some of them. If you do this, make certain they are sealed up to keep off dust, and that the storage area is cool and dry. Now to the actual loading.

The best combination we've found for duplicating European FMJ-Ball loads is the 124-grain full-jacketed bullets offered by several makers, combined with 5.9-6.0 grains of Hercules Unique powder. Lighter FMJ bullets such as the 116-grain Norma may be substituted without any other change. Velocity with the 124-grain bullet is nominally 1150fps, and this load will surely function fully and reliably in any Browning that is not mechanically defective.

FMJ 9mm bullets generally run .354-.355-inch diameter and are uncannelured. Make certain the resized case will grip the bullet tightly; this requires a case-mouth ID of no more than .351-inch, perhaps even less. With some lots of cases it may be necessary to polish the expander plug smaller to achieve this. Don't attempt to apply a roll-crimp on an uncannelured FMJ bullet. Instead, seat the bullet first to an overall cartridge length of 1.170-inches, *then* apply just enough taper crimp (as a separate operation) to remove all the case flare and close the case mouth tightly on the bullet.

Unfortunately, factory FMJ bullets are quite expensive, so we need a lead-bullet substitute. First, the bullet should be of round-nose form, and cast of a hard alloy such as linotype metal. Lyman mold number 358242 in 121-grain weight, or number 358269 (129 gr.) will do very nicely and should be sized to no more than .356-inch, *unless* measured barrel groove diameter is greater. Some 9mm barrels have run as large as .360 inch and as small as .353 inch. Bullet diameter should not be more than .0015 inch over than groove diameter.

With either bullet, use 5.4 grains of Unique, and seat the bullet to a depth where the case mouth just covers about half of the band ahead of the forward lubricating groove. A moderate taper crimp, pressing the mouth slightly into the bullet, completes the job. This load produces 1125 to 1150 fps, depending on the specific bullet, and functions very reliably in almost any good-condition 9mm P. pistol. However, don't let cartridge length exceed 1.170 inches or magazine problems will be encountered.

A lighter load for fun or target use is easily concocted, also with a cast lead bullet. My favorites are Lyman 358302, 112-grain (cast hard, remember) and sized to groove diameter, and #358345, 115 grains. As little as 4.0 grains of Unique or 3.4 grains with Bullseye will produce 900-950 fps with either bullet, and will function a smooth gun reliably. Some guns will do well

New, unfired cases are best for defense & hunting loads.

The lightest to the heaviest lead bullets for the 9mm: .360 lead ball, 95 grain RCBS; 121 grain Lyman, #356402 and Speer's 158 gr.

with lighter powder charges, so don't hesitate to work down a bit 1/10-grain increments if your gun works well with these loads. Bullets should be seated and crimped as already described.

Ultra-light loads which do *not* cycle the gun can almost be any lesser charge of Unique or Bullseye, with the bullet just mentioned. Number 356404 (95-grains) does nicely with 2.7 grains of Bullseye when single-loaded. Any of the 90-100 grain bullets intended for the .380 ACP will do well.

For the very lightest loads, perhaps to be used in one's home on a very small range, a .360-inch round ball and as little as 1.1 grains of Bullseye can be used. This load will not even unlock the breech of most pistols, but shoots with surprising accuracy at short ranges. The powder charge is placed in the case, followed by a grease wad, then the ball is tapped lightly into the flared case mouth. The cartridge is dropped into the chamber and the slide closed upon it. After firing, the slide must be retracted manually to extract the fired case. Cases may be used many times for this load *without* resizing. Such loads can be a great deal of fun with a small bullet trap in your basement or garage.

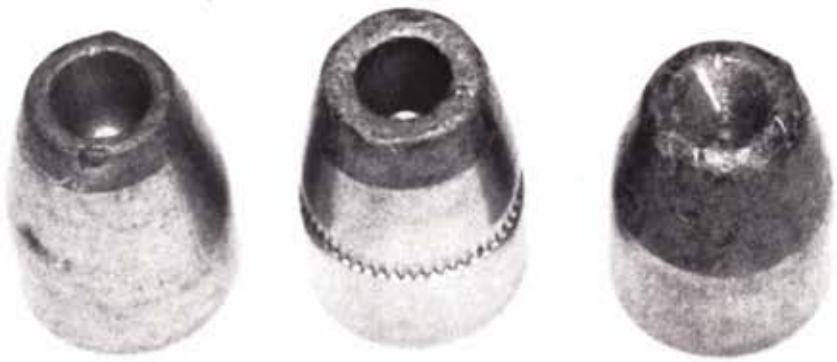
Loads requiring the most attention to detail are those intended for defense and hunting. Today the general characteristics of the best 9mm P. defense load are well established; a light, jacketed, expanding bullet at high velocity, with the capability of opening the largest wound cavity possible in the target. For handloading purposes these requirements are best met by a 90-grain, thin-jacketed, soft-cored bullet of hollow-point form; said bullet driven at over 1400 fps.

To insure absolute reliability and maximum velocity such loads should be assembled in *new* cases which have been prepared as described earlier. It is especially needful that the bullet be held quite tightly in the case and be well supported against feeding impact; thus a shoulder should be formed in the case for the bullet base. Further, it may be necessary with some lots of cases to use an undersize resizing die and expander plug to obtain a tight-enough bullet/case assembly.

My choice of bullets for this type of load is currently the Sierra 90-grain JHC of truncated-cone shape. This is a very short bullet; when seated properly, cartridge length is only 1.010-inch. This length will feed well in the Browning and some other guns but not at all well in the Luger/Parabellum or Walther P.38. Even in the Browning, it may require some smoothing of the feed ramp and chamber mouth. Never simply *assume* a defense gun will handle a particular load; such an assumption might be fatal.

This 90-grain bullet can be safely driven at 1400 fps from the Browning barrel by several powders, but my choice is 7.5 grains of Unique, producing about 1450 fps at safe pressure levels. About 1500 fps can be obtained with 8.0 grain of Herco, but compression of the powder charge becomes a problem in assembling the load.

All of these loads are maximum by SAAMI standards, producing chamber



The various forms of nose cavity in JHP bullets currently available. The more exposed lead, the greater risk of jamming.

pressures in the 33,000 CUP range. By no means should they be exceeded, though the Browning pistol has proven its ability in H.P. White Laboratories tests to withstand substantially greater pressures.

Such loads should be assembled in *new* cases with great care. Powder charges should be individually verified, and particular attention should be paid to starting the short bullet straight in the case. The case mouth should be taper-crimped tightly on the bullet, but not so much that diameter over the case mouth drops below .370-.375-inch.

The gun should be thoroughly tested with this load to make certain that completely reliable functioning is obtained. There is no room in a gunfight for malfunctions.

In any event, the foregoing is a superb defense load in the Browning pistol, equal in performance to the now-defunct Super-Vel, 90-grain, JHP factory load of a couple years back.

The 90-grain defense load will serve well for some hunting purposes, but for a deer and the like, a somewhat heavier bullet with deeper penetration is desirable.

In the past, my favorite 9mm hunting bullet was the now-discontinued Super-Vel 112-grain JSP. No comparable bullet is available today, but the 115-grain Sierra JHC and Speer 125-grain JSP will do the job. Unique is the best powder, and 6.5 grains of it will drive the 115-grain bullet at a hair over 1300 fps. The 125-grain bullet will be given a bit over 1200 fps by 6.2 grains of the same powder. Both bullets will expand well at those velocities, but without the explosive effect of the 90-grain bullet. Thus, they penetrate deeper on game.

Assembly of these heavier-bullet hunting loads should be conducted with all the care and attention lavished on defense ammunition. The same mechanical problems exist and are solved in the same manner.

Of course, we could go on and on with loading dope for the 9mm Parabellum/Luger. In fact, I've already used half again as much space as Ye Editor originally allowed. A few hundred additional loads wouldn't help a bit, really—and, anyway you can find them in several loading manuals. The few carefully-developed and tested loads we have listed in these pages will enable your many-shot Browning to handle any job within its capabilities, so let's leave it at that.

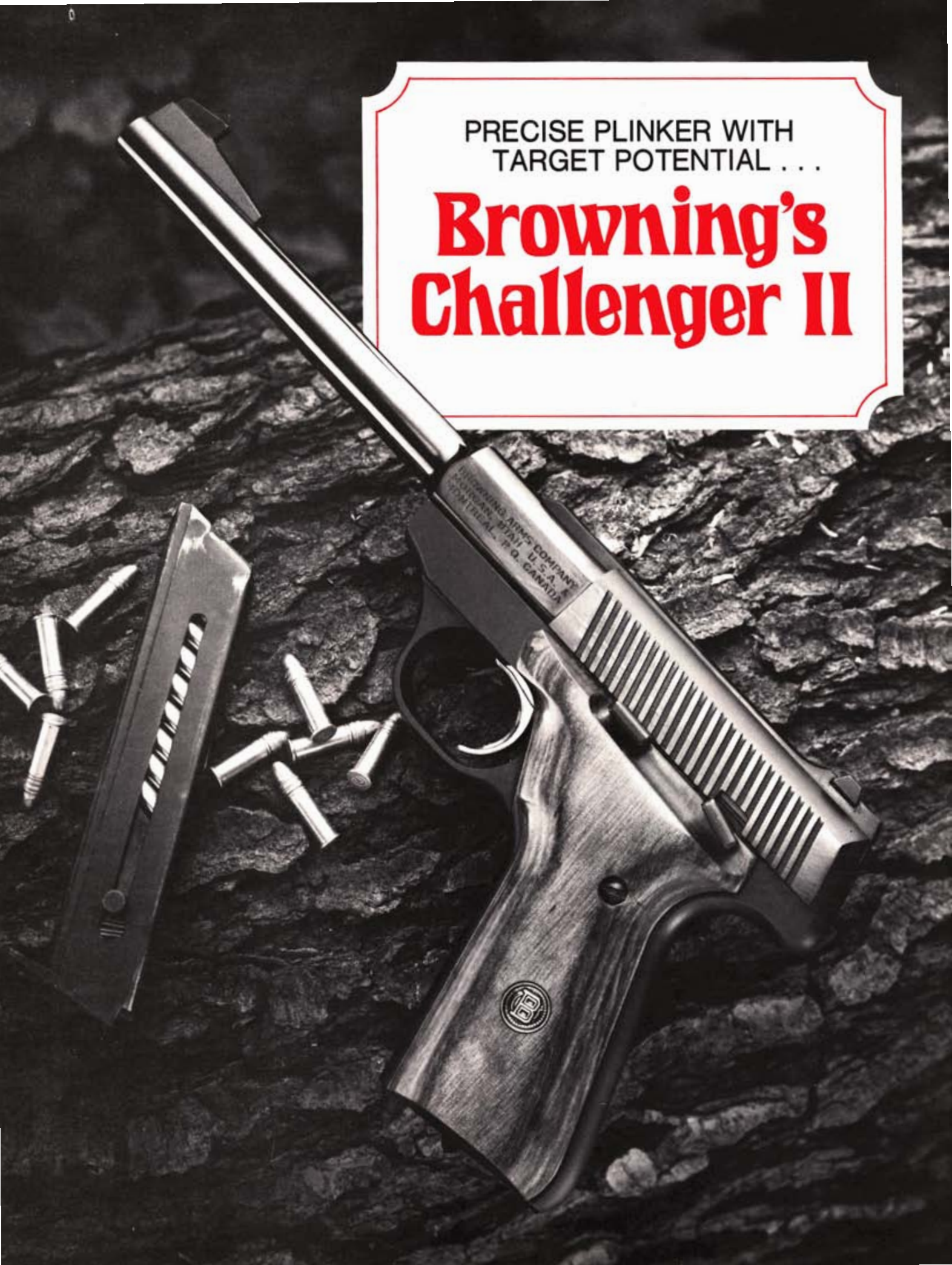
The 90 grain and 115 grain JHC bullets from Sierra expose no lead at bullet nose.

Case mouths should be only slightly flared for bullet seating.

9mm PARABELLUM (LUGER) LOAD DATA

No.	Bullet	Weight, gr.	Powder	Weight, gr.	Velocity
		Lead Bullets			
1	.360 ball	70	Bullseye	1.0	——
2	L#358242	92	Bullseye	3.0	——
3	L#358242	92	Bullseye	4.0	1050
4	L#358242	92	Bullseye	5.3	1325
5	L#358345	115	Unique	4.5	1025
6	L#358345	115	Unique	5.8	1225
7	L#356402	121	Unique	4.2	910
8	L#356402	121	Unique	5.3	1140
9	L#356402	121	Unique	6.0	1240
10	L#358242	121	Unique	4.2	920
11	L#358242	121	Unique	5.5	1150
12	L#358480	133	Unique	5.0	1050
13	L#358416	158	Unique	4.8	1000
		Jacketed Bullets			
14	Sierra JHC	90	Unique	5.5	1300
15	Sierra JHC	90	Unique	6.0	1400
16	Sierra JHC	90	Unique	7.0	1450
17	FMJ	100	230	4.7	1200
18	FMJ	100	230	5.2	1300
19	Sierra JHC	115	Unique	5.6	1200
20	Sierra JHC	115	Unique	6.0	1250
21	Sierra JHC	115	Unique	6.4	1300
22	Sierra JHC	115	Unique	7.0	1350
23	FMJ	116	230	4.5	1120
24	FMJ	124	Unique	5.5	1200
25	FMJ	124	Unique	5.2	1060
26	JHP	125	Unique	5.1	1050
27	JSP	125	Unique	5.4	1050
28	JSP	125	Unique	6.0	1160

Loads 8, 11, 19, 24, 27 Duplicate service loads. Loads 16, 21 excellent for defense. Loads 21, 26, 27 fine for defense and hunting.

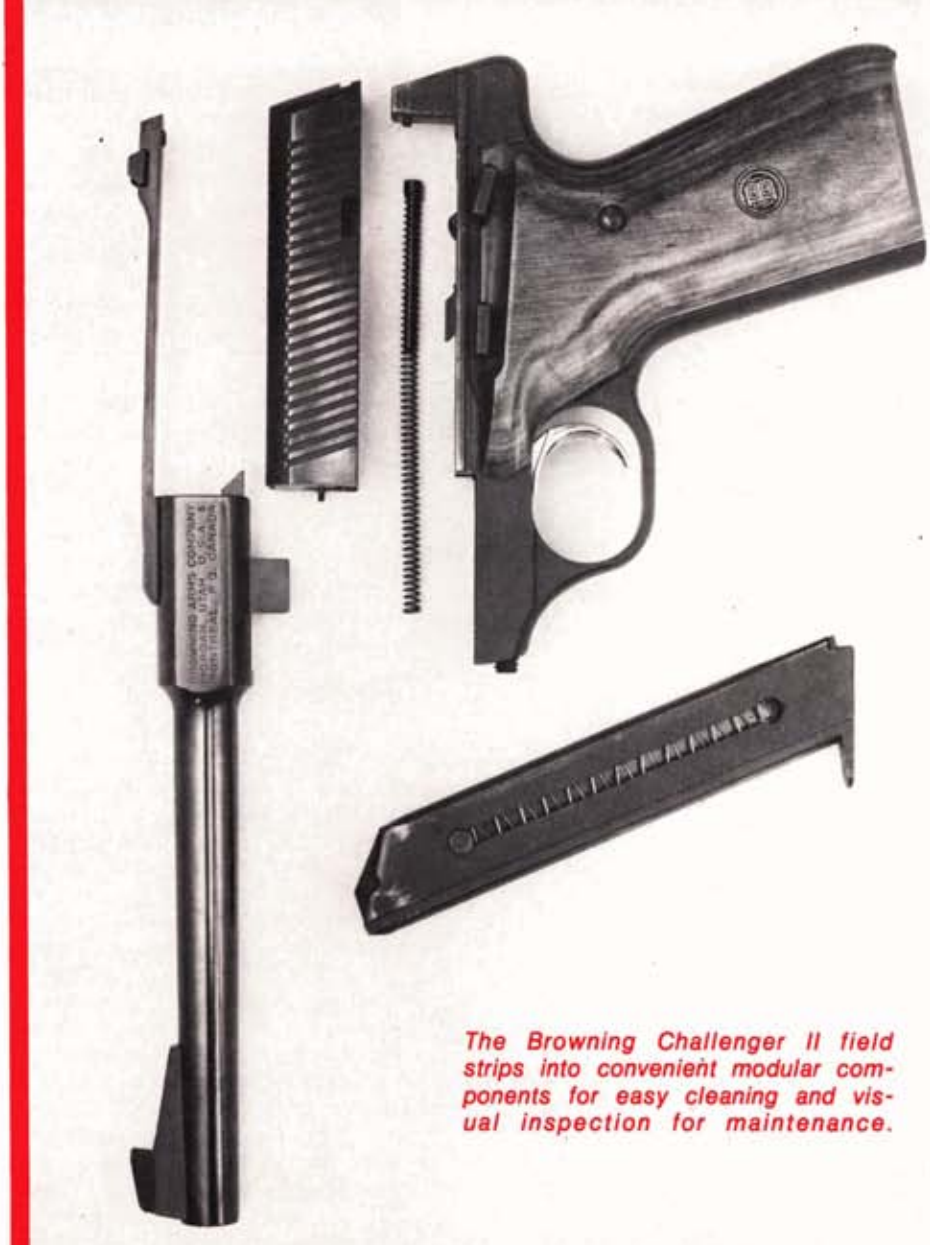

PRECISE PLINKER WITH
TARGET POTENTIAL . . .
Browning's
Challenger II

By HERBERT GATES

Many handgun designs from the redoubtable John Browning have come to be classics in the firearms field. Some, however, have fallen by the wayside due to the expense of their manufacture in an increasingly cost-conscious world, some have disappeared from the American scene due to the sinister machinations of our beloved legislators. All, though, have shared the common virtues of design excellence and carefully thought out detailing.

In order to circumvent both the cost and legalistic problems involved in bringing the fine Belgium-made FN pistols into the country, Browning has inaugurated a plan for a continuing line of Browning sidearms to be manufactured at a stateside facility. The first fruit of this venture has been dubbed the "Challenger II" and calls to mind some of the fine rimfire autos from Browning's past. To the eye of the initiated, the Challenger II, even if stripped of all identifying markings, would still be instantly identified as a Browning product. So good the finish, so splendid the functioning and so graceful the styling that there can only be one guess as to the gun's parentage.

The sample Challenger II supplied to the *American Handgunner* for evaluation came sparkling out of its packing box at a hefty 39-ounces unloaded. The bulk of this weight is centered at the grip, giving the new .22 just a touch of that ol' Parabellum feel. The grip angle, however, coupled with its shape and thickness is far more reminiscent of the Hi-Power. The deep bluing, of the barrel and slide sides was contrasted by matte finished blue on the grip frame unit. Nicely figured stocks of laminated hardwood along with a broad, gold-plated trigger provide an attractive bit of eye-relief. The overall visual impression of the gun is an excellent one.



The Browning Challenger II field strips into convenient modular components for easy cleaning and visual inspection for maintenance.

The Challenger II's rear sight is screw adjustable for elevation and drift adjustable for windage . . . a simple, trouble-free sight unit!

Though internally similar to several preceding models, this home-grown rimfire has been designed to take advantage of the latest manufacturing processes. Many part units are good investment castings and damned few are stampings. The straight blowback action is at once simple yet sophisticated. Simple in its economy, sophisticated in its design ingenuity. The trigger linkage is notable for its clean, straightforward design. This paucity of frills and useless gewgaws contributes in no small measure to the excellent trigger letoff that our sample provides. My scale measured the Challenger II's trigger at a sweet, even 3-pound with a slight amount of slack, but no overtravel at all. The Challenger II's lock time, while not the world's fastest, is still superior to several target-grade rimfires that I have encountered.

Internal polishing is more than adequate by today's standards, and is certainly sufficient from the aesthetic standpoint. A functional nicety comes at the Challenger II's muzzle, in the form of a neatly squared off crown which protects the muzzle inside a 1/32" recess of solid barrel steel. This thoughtful addition may preclude damage from careless muzzle-first cleaning (shudder) or an unfortunate tumble from holster or bench.

The Challenger II's sighting equipment is clean in line and of sufficient dimension for good sighting, the rear sight cut being just a tad shallow, though. The adjustment for elevation is in the form of a topside mounted screw which raises the entire unit in a manner similar to that employed on J-frame Smith & Wesson revolvers. Windage adjustments, if needed are made by dint of any soft, non-marring drift applied heartily to the sight leaf. The shallow rear notch is nicely shadow-boxed by

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Stoeger's Trusty

These re-vamped toggle tops carry the Luger name, but feature newly designed innards!

By GEORGE C. NONTE

A half-century ago the old A. F. Stoeger & Co. obtained the U.S. rights to the name "Luger". The company founder, A. (Alex) F. Stoeger (1866-1945) had arranged for exclusive distribution of Germany's DWM-produced Parabellum (Luger) pistols in this country and was coppering his bets in all directions. Though the pistols were known as Lugers (after George Luger, a DWM engineer who streamlined the original Borchardt design) in this country, they were called 'Parabellum' throughout the rest of the world. Looking ahead, Stoeger wanted to protect the name and the market. The events of the late 1960s proved his wisdom, when another company (Interarms) began selling new-production Parabellums in this country.

World War Two saw the end of commercial Parabellum/Luger pistols, leaving Stoeger (now Stoeger Industries) with exclusive right to the Luger name, but no new Lugers to sell. Eventually the Stoeger Company determined to capitalize on the popularity and legendary mystique of Luger pistols and put the name to use. A design team set about developing a Luger-type pistol in .22 LR caliber that would look, feel, and (in general, if not in detail) function as did the original Parabellum. Inasmuch as the original design was of another era and devilishly costly to manufacture (borne out by the current $375 price of *new* Mauser-production Parabellums), it was necessary to design from an entirely different approach, using all the latest technology.

The result was a pistol of the same weight, balance, configuration, and appearance as the old Parabellum—but incorporating modern castings and stampings and an entirely different internal mechanism. In an economic sense, the effort was highly successful, for the new "Stoeger Luger" now sells (retail) for barely more than one-quarter the price of the *new* Mauser Parabellum. This is a rather interesting indication of what *might* have been done with the original design had it been continually revised rather than frozen forever in its definitive 1908 form.

In any event, the new "Stoeger .22 Luger" was introduced in the 1969 (No. 60) edition of the long-famous "(Stoeger) Shooter's Bible," a combination catalog and handbook highly recommended yet to all who have even the slightest interest in guns. Price at the time of introduction was $67.50 (retail) and only one version was available. The latter situation has since changed.

The Stoeger .22 Luger is *not* manufactured directly by Stoeger Industries, but is produced *for* Stoeger by an independent company. The marking "Manufactured in the USA by Stoeger Arms Corporation" might seem to contradict that statement, but it does not under present-day law and language. So much for history.

This contemporary Luger utilizes the basic Borchardt toggle-breech system, but modified so that the barrel is stationary upon the one-piece frame/receiver, and so that the knee-joint toggle is never *mechanically* locked.

The original design placed the three joints of the breech toggle in a straight line, forming a rigid mechanical lock when the breech was closed; a mobile barrel and extension was then used so that recoil travel could "break" the toggle upward by striking the center joint against an upward cam on the frame.

Stoeger placed the three toggle joints slightly out of line; the center joint above those on either end. Thus, even when the

The recessed screw in the target model sight adjusts windage. Elevation adjustments are handled by another screw on the bottom.

The yellow horizontal bars of the rear sight leaf provide the shooter with a highly visible reference point for dim light shooting.

Toggletops

The Target and Standard Stoeger Lugers feature the traditional top-break toggle linkage. Note the large, adjustable target style sight unit.

breech is fully closed, the toggle is already 'broken' upward at the center. Being so, it requires no outside influence for unlocking and it is possible to use a rigid assembly of barrel and frame. Simple case projection (force applied to bolt face by chamber pressure, through the case head) forces the center joint upward so that the bolt proper can move rearward to extract the fired case and feed a fresh cartridge.

Though this might be considered a pure blowback action by some, the time and effort expended in breaking the toggle fully upward (at an angle of 90 degrees to bolt travel) does slow down breech opening and make possible the use of lighter parts moving through a shorter distance. In this respect, the Stoeger breech may be better described as "delayed blowback."

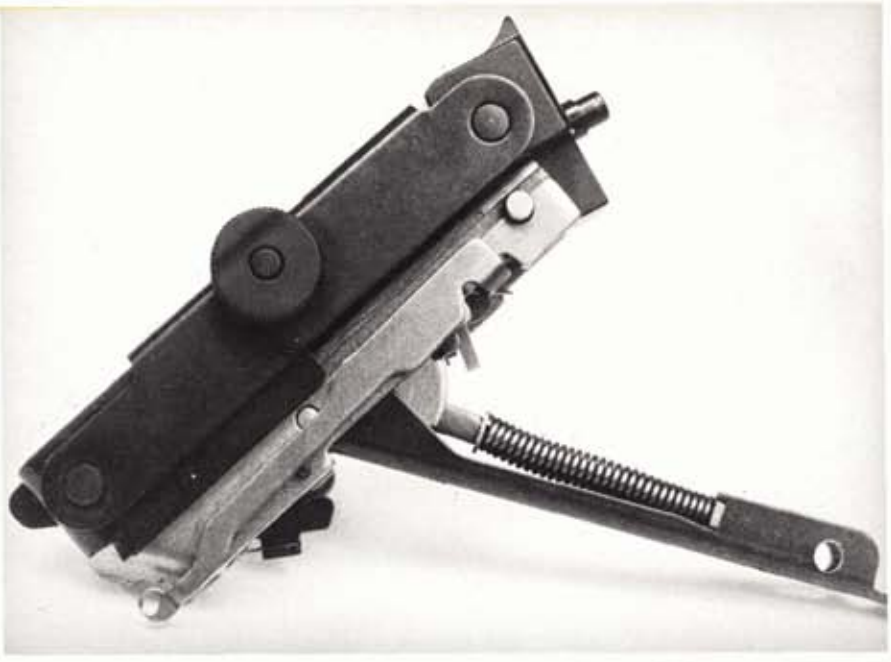
In achieving this modification of the original system, Stoeger has succeeded in maintaining the original appearance and method of operation, with the large toggle joint popping high above the frame, into the line of sight, the slamming back down with each shot. Of course, this movement occurs so rapidly that the toggle does not interfere with sighting; in fact, it flashes there so briefly one's eyes cannot perceive it.

The Stoeger toggle action utilizes a swinging concealed hammer and a spring-retracted firing pin; a far cry from the Parabellum striker system. It also dispenses with the complex system of levers and exposed sear of the Parabellum. More readily visible, though, the two rear toggle links are mere, simple, pressed-steel shells where the originals were heavy, complex, machined forgings.

Let's delve a bit into the specifics of this unusual design. The frame is in one piece, with the barrel secured in its front, and completely open at the top from that point rearward. Frame is a high-strength, aluminum alloy.

A solid, steel, breech block about 1.85" long, sliding horizontally in the frame, meets the barrel breech. At 12 o'clock it carries a simple hook extractor stamped from steel sheet. Near the left edge, centered vertically, the recoil spring and guide run in a horizontal hole; when the breech block recoils, the spring is compressed against a 'boltways block' at the rear of the frame. A conventional, spring-retracted firing pin rides inside the breech block.

A stamped, steel toggle is pinned to the breech block near its front, and is further pinned to a similar, second toggle whose rear is pinned to the boltways block. The rear toggle carries pinned-on knobs to resemble the original Luger; these knobs also serve as handles for manually opening the breech. Except to provide a handle and to slightly slow breech opening, the toggles and knob are far more cosmetic than functional. A spring in the rear toggle keeps both of them snugly in position, serving no other purpose. Beneath all this, there is a separate "boltways" which takes the form of a large insert fitting down into the frame and pinned there. It carries the firing mechanism and may be removed as a unit.



Top: the complete breech mechanism removed as a unit from the frame Bottom: the magazine is shown seated in the grip frame minus panel.

firmly and depress takedown plunger in upper rear of frame; carefully ease entire unit upward, taking care that the spring-loaded takedown plunger doesn't shoot across the room or hit you in the face as it clears the rear of the frame.

At this point, the breech block face can be scrubbed clean and the entire unit sloshed in solvent to remove dirt. No further disassembly is recommended by Stoeger and I second that motion emphatically. The myriad of small pins and springs can be gotten apart easily enough—but putting them all back correctly is a mind-blowing job unless special tools and fixtures are available, along with Job's patience. I detail stripped this unit once in a few minutes, then spent four frustrating hours coaxing it all back together again. Profit from my experience. Strip it if you must, but don't call me for detailed assembly instructions afterward.

Actually, there is no need whatever to tear down the unit. Trigger pulls are normally fairly good, so no work is necessary there for any shooting suited to the gun; a quick slosh in solvent will accomplish all the cleaning needed.

Removal of the boltways unit leaves only the trigger and magazine catch attached to the frame. There is no need whatever to remove them, though the steps to do so are readily apparent.

Replacing the boltways unit is quick and easy; just start it down into the frame, being careful when the takedown plunger is started so that it doesn't slip back up over the edge of the frame and fly out. Also, care must be taken to insure that the front of the sear bar engages the trigger

(Continued on page 66)

A conventional, concealed hammer is pivoted to the rear of the boltways, driven by a strut and coil mainspring seated in the boltways' downward extension. An upside-down sear rides behind the hammer. Other small parts are also assembled to the boltways. A sear bar, with its rear end U-ed to fit around and under the boltways' left wall rides on the left side, connecting to the trigger. A lug on its rear, inside the boltways, engages the sear so that pulling the trigger releases the cocked hammer to fly forward and strike the firing pin.

This entire unit is removed from the frame easily: open breech, safety on "fire", and remove magazine; remove grips by turning out their screws; turn out sear bar retaining screw on left above trigger; press out frame assembly pin about 1/3-way up from bottom of backstrap; close toggle by drawing knobs back slightly, then easing them down; grasp toggle

The standard, fixed sight Luger is the predecessor of the current target sighted versions.

PRIZE POCKET PISTOL

By GEORGE C. NONTE

F. I. /GARCIA MODEL-D

A Smooth Handling Mini-Gun!

Firearms International, now a division of Garcia, has long been well known for its importation and distribution of top-quality firearms. Over the year it has represented Beretta, Astra, Star, Rossi, Sako, and other respected names. Over nearly two decades I've come to have a high regard for FI and its top-level people, as well as its products.

However, it is *not* well known that FI also *manufactures* guns in this country. For quite a few years now FI has operated a production facility that has turned out several different guns near Washington, D.C. The most recent product of that plant is the FI Model D .380 ACP pistol.

The Model D pistol is unique in several respects: it is the smallest, exposed-hammer .380 available; it's essentially a foreign design manufactured here. Workmanship is good, and external finish is actually better than that of some old-line, major, domestic, handgun makers' products.

Several features of the Model D will endear it to other shooters as to me. It is of locked-breech design; only Llama (Gabilondo/Stoeger) and Star (Bonifacio Echeverria/Garcia) make true, locked-breech pistols in this caliber. It is of all-steel construction—no plastics, pot metal, or aluminum—with good, wood grips. It has the most positive and trouble-free, manual safety to be found on pocket-size guns. It carries an auto/manual slide stop, which locks the slide rearward after the last round is fired; it is also useful for speed-loading. It has the M1911 Browning magazine catch which is, in my opinion, the best of all. It shares takedown (field-stripping) procedures and many functional characteristics with the venerable Colt/Browning .45 Government Model.

While it is not the only .380 auto with those characteristics (the Star SM and Llama .380 have them), it is by far the smallest and most compact pistol of reasonable power to possess them. At present, the only other available .380 that approaches it in size is the TDE "Back Up," which lacks most of those features. The Model D is nominally 6" long, 1.1" wide, and 4.3" high, with a barrel length of 3.16". Weight is 19 ounces empty, 21 ounces loaded with a round in the chamber and six in the magazine.

The history of the FI Model D is intriguing. Back in the early 1960s, the Spanish Star company (Star, Bonifacio, Echeverria, CIA, Eibar) introduced a very small and light, aluminum-frame version of its Model SI, locked-breech .380 auto. Designated Model DK, it was sold here by FI as "Starfire" and proved to be durable, reliable, and popular. It was the smallest locked-breech .380 made and, as such, was barred from importation into this country with the enactment of GCA'68 and its implementing regulations. Many a tear was shed by .380 fanciers, but there was no replacement for the Starfire. Those who preferred a locked-breech gun in that caliber were forced to buy the larger and heavier Star S-series on Llama MIII-A. Both, incidentally, are still available today in improved form.

No small pistols at all could be imported (still can't) and several domestic makers tried to meet the demand previously satisfied best by the Starfire. None of those guns quite matched the versatile combination of features found in the Star-

A muzzle-on view of the Model D shows the little .380's obvious Colt influence. The recoil spring guide can be seen protruding from the muzzle's front bushing.

fire.

After a few years of this, Colt announced it would soon offer a small, .380 pistol. Colt fanciers at first hopped up and down in glee, expecting a resurrection of the old 1908 Pocket Model. They were soon suppressed when Colt displayed sample guns and pictures that appeared to be almost an exact copy of the Star DK/Starfire. Grudgingly, Colt admitted that this gun, designated "Colt Pony," would be manufactured "by someone else in this country for Colt, to Colt specifications."

Two years passed, with no Colt Ponies delivered, then Colt admitted the project had been dropped.

Then, suddenly, a short time later, identical guns bearing the marking "FI Model D" and the serial prefix "CPA" (for "Colt Pony Auto"?) innocently entered the pipeline. I saw my first examples at a Dallas gun show in mid-1974. Eventually the gun appeared in FI/Garcia catalogs as the FI Model D.

Neither Colt nor FI appeared much interested in answering questions about the origin of this gun. In any event, it now seems obvious that the FI Model D was intended to be manufactured by FI for Colt, to be marked and sold as the Colt Pony. That is reasoned conjecture based on such evidence as is available, including the gun itself and Colt pix and releases.

In any event, the FI Model D is available in quantity and is currently being made at the FI plant. It is selling well and seems destined to be even more favored than the old Starfire.

Those pistoleros who are familiar with the Starfire will immediately note the similarity of the Model D. How similar are they? Well, when I switch barrel/slide groups between a new Model D and my old Starfire, both guns function normally; the Model D magazine works in the Starfire, but the Starfire magazine is prevented from seating in the D by its forward-reaching floorplate. However, the magazine *bodies* interchange if the proper floorplates are installed. Incidentally, in a pinch either the Model D or Starfire will function with a Star Model SI or SM magazine; being longer, it simply extends beyond the butt.

Aside from the improved sights of the Model D, its upper half (slide, barrel, bushing, recoil spring, firing pin, extractor) appear identical to the Starfire. Internal parts also appear to be generally the same, but the frame *is* different.

Externally, the frame spur at the upper rear is extended rearward about .30". This better protects the hand from the hammer spur and improves handling. The butt is lengthened .25" in front of the magazine, about .425" behind it. In between these two protrusions, the butt is the same length as the Starfire. This allows use of the basic Starfire magazine box, but with a .175" thick floorplate to fill the gap. The floorplate does not extend beyond the box at front and rear and is serrated on both sides to provide a good grasping surface in the event a magazine doesn't drop out freely when released. The rear butt extension is profiled and contains a transverse .170" hole, which appears to be for attachment of a lanyard if desired. Actually, I suspect the hole is put there just for looks; lanyards are not popular in this country, and have no place at all on a pocket pistol.

Along with the butt extensions, the curve and sweep of the backstrap differs a bit from the Starfire. Front and back straps are smooth, but the swell at the bottom-front edge aids control nearly as well as would checkering or serration.

The frame differs in another very important way from that of the Starfire: it is an investment casting, rather than a machined forging. Of course, there is finish machining on the casting. The frame has therefore been redesigned for casting. All functions and part locations remain the same, but internal, non-functional shapes and profiles are designed to simplify efficient casting.

The Model D's adjustable rear sight is small and relatively snag-free. The manual safety lever is large and easy to engage and disengage with a thumb flick.

Adjustable for windage only, the Model D's rear sight unit is of the traditional patridge configuration and is not shadow-boxed. Opposing screws must be loosened and tightened to move the sight leaf laterally Though simple in concept, the arrangement works remarkably well.

The greater length and height produced by the frame changes do not appear to make the D any less concealable than the Starfire. At the same time, they improve handling and pointability. The old Starfire's hammer will chew up the web between thumb and forefinger (so will the Star SM), but the D frame spur eliminates the blood-letting. I fired 13 rounds rapid from the D with no skin damage at all; the next 13 shots were from the Starfire and left blood oozing from a badly-chewed 1/4" spot of skin.

So, when all is said and done, the FI Model D is simply a domestically produced, slightly-modified copy of the very desirable Star DK/Starfire. As such, with the beneficial changes, it is even more desirable and effective as a pocket-size auto than the Starfire. It's better.

As the photos show, the D uses the same locking and barrel support setup as the Colt GM; ribs and grooves in barrel and slide for locking surfaces; vertical and reciprocating barrel movement through a swinging link attached to the frame by the slide-stop pin; a removeable barrel bushing. Slide shape, support, and function are the same as on the GM. A small notch in the barrel tang allows one to see the head of the cartridge *if* one is chambered.

Internally, the rear of the slide is different, typically Star. The inertia-type firing pin is spring-retracted and held in place by a vertical pin through the slide. This pin fools many a pistolero, who doesn't know where to look. It is covered by the rear sight; drifting the sight leftward uncovers the pin, which can then be drifted *down* to free the firing pin and spring.

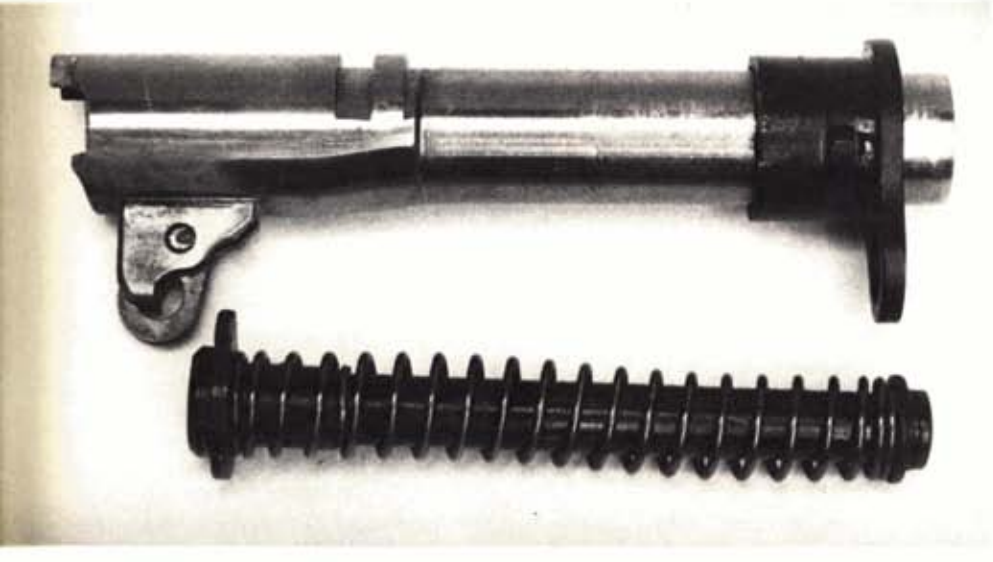
The extractor is a simple, spring-loaded, pivoted claw riding in an open slot in the right side of the slide, behind the ejection port. The slot does *not* break into the port, thus avoiding a weak spot there. The extractor pin is readily visible; drifting it downward about 3/8" frees the extractor.

The rear sight is screw-adjusted for windage; there are no clicks or graduations, nor is there any provision for elevation adjustment. Both sights are wider and higher than on the Starfire and appear identical to those of the Star SM. The rounded, front element could be improved by flattening and serrating its rear face.

The lockwork is distinctively Star, dating back to Echeverria's first, locked-breech design of 1919. The conventional hammer and sear are pinned in the rear of the frame; a nearly-vertical coil mainspring drives the hammer from its hole in the integral backstrap. A leaf sear spring is pinned into the rear of the magazine well. The trigger is pivoted to the frame and spring-loaded to a single, offset, sear bar, running in a cut in the right side of the frame. A notch at the rear of the bar engages a lug on the foot of the sear when the slide is in battery and the trigger is forward. A T-section disconnector rides vertically in a slot above the bar, its upper end in a notch in the underside of the slide. When the slide moves rearward, it cams the disconnector downward, press-

(Continued on page 65)

The Model D's grip frame is relieved to allow the grooved finger slots of the magazine to be easily gripped during reloading.



The linkage and locking of the Model D show a distinct influence from older Colt designs. Note the captive recoil spring.

HANDGUNNER LEATHER

The Jackass System

By JERRY AHERN

PART IV—WRAP-UP

AMERICAN SALES & MFG.
(Box 677, Larado, Tex. 78040

Next comes American Sales and Manufacturing with distinctive designs blending simplicity and ruggedness. American selected two holsters for this survey, the first being the P-45M, a High Ride forward tilt speed holster cut from top grain leather. It features an optional, hand-creased, contoured hammer strap and has a heavy, double machine stitched welt for durability. Available in plain or basket weave, it is made for the large frame automatics such as the .45, S&W Model 39 and the Browning P-35 High Power. The second holster from American, made for both semi-autos and revolvers, is the P-90/95. Designed and manufactured to eliminate bulk, using leather throughout, these holsters feature a fast adjusting lock stabilizing slide to prevent shifting position during wearer's use. A safety strap is standard on both models. Finish is plain black. The holster can be locked to the belt with a buckled strap.

BRAUER BROS.
(817 N. 17th, St. Louis, Mo. 63106)

Next on the list is Brauer Brothers Manufacturing Company, makers of holsters and leather products since 1898. Makers of about 35 different styles of holsters, they selected three to mee our criteria.

The first is their O Series holster, a well-built holster with steel support at hip to maintain position. A hammer safety strap insures a snug fit as well as fluid, smooth draw, no separate action being necessary. The holster is constructed of top grain cowhide, available only in black. It is hand-molded with welted seams and plug bottom. A police duty rig, it features a snap-off belt attachment and is made for revolvers and semi-autos.

For top protection, Brauer Brothers recommends the FH series holster, providing security from gun snatching and protection from foul weather or rough terrain. Also hand molded with welted seams, the FH is made of top grain cowhide and available in black only. It features a snap-off belt loop, this sometimes referred to as the Mexican style holster; made for revolvers or semi-autos with full flap.

For concealment, Brauer recommends their K series shoulder holster, a traditional model with the gun carried butt up. Made of russet top grain cowhide with a spring to hold the gun in the holster, the harness straps are so constructed as to press the butt towards the body to avoid bulge and enhance concealment. It features a snap off belt retaining loop to make it easy on, easy off and is available for revolvers or autos.

JACKASS LEATHER
(920 Waukegan Rd., Glenview, Ill. 60025)

Next on the list of manufacturers is Jackass Leather, makers of one of the most increasingly popular shoulder rigs on the market. The Jackass Shoulder System is a totally different concept and can be treated as almost a different type.

Made of premium saddle leather starting out as eight-ounce then dry split to seven, the holsters are double lock machine stitched with seven cord linen thread. Wet molded on the actual guns, they are hand fitted for detail; 23 separate steps go into each shoulder holster's production. All leather is cut with the grain for longest life, hand edged and hand sanded.

The Jackass rig is completely balanced, distributing weight evenly for wearer comfort and concealment. The harness is of suede, both harness halves connected by an expandable coupler, approximately three inches in length. The harness halves are infinitely adjustable by means of flat headed screws which, when perfectly adjusted, are best anchored with Lok-tite or some similar compound to prevent loss.

On the off shoulder side, two magazine pouches or dump boxes are positioned and, below these, an optional thumbsnap cuff case.

Balanced in weight, the wearer can be in any position and never experience binding or discomfort. The gun itself rides diagonally, butt down, secured by a sturdy but fast thumb snap. The Jackass shoulder rig is available for all size DA revolvers and medium and large frame autos. To be appreciated, it must be experienced, worn. Also from Rick Gallagher at Jackass comes a fine line of belt slide style holsters, made of seven and one-half-ounce leather, wet molded and sewn with 106 pound drop tested nylon thread. These latter are available in black and brown.

The Jackass shoulder rig can now be had in three other models, all of the same design but of different materials. The first of these is the Latigo model in black and other popular colors. Next is the glove leather model and last the suede model, this for those handgunners preferring the softest leather possible in a shoulder holster. Gallagher does custom designing when needed and discussed several innovations in various stages of development.

UNIVERSAL CONCEALMENT
(Drawer S, Tulsa, Okla. 74115)

One of the most innovative manufacturers on the scene is Universal Concealment, makers of what can only be described as perhaps the most versatile rig on the market. It is a combination rig based on a thumb snap holster made of bull llama leather which has a distinctive and attractive grain and is exceedingly durable. All holsters are lined with vegetable tanned garment suede, free of acid which could damage blueing. The holsters are lock stitched with bonded nylon high tension cord. Under normal use, all Universal Concealment products are guaranteed for life.

Now here's where the Universal Concealment line gets interesting. The holster is secured to the belt with a triangular leather patch locked to the holster with blued one-way paratrooper snaps, impossible to be ripped open and amazingly rugged. Remove the triangular patch, po-

Universal Concealement

sition the holster on the available shoulder harness and lock on the patch. The same holster is now a shoulder rig. The harness, black leather of bull llama construction, positions the gun diagonally. The cross-over strap is top quality rugged elastic and can be utilized in three different ways. At the end of the elastic is a fireman's suspender alligator clip. This can be attached in three different positions. First, it can be taken diagonally across the back and clipped to the trouser band or belt just in front on the side opposite the holster. When concealment is not a primary concern, the elastic can be adjusted and the strap brought around the body across the chest and clipped to the shoulder harness near the holster. Thirdly, the strap can be increased still further in size and hooked under the armpit and around to where the more conventional vest type off shoulder strap is simulated. Or, under a well tailored coat, the cross over strap can be done away with completely and only the actual harness worn.

Finally, for the sneaky gun carriers in the crowd, the leather triangle can be unsnapped and the holster removed from the shoulder harness and secured to the Universal ankle rig, suede lined with a cushion of synthetic lambs wool to guard against skin irritation and ventilation holes to minimize perspiration. The holster is held secure with extra strength velcro and a security bar and slot system.

SMITH & WESSON

(2100 Roosevelt Rd., Springfield, Mass. 01101)

Next on the list of full-line manufacturers was Smith & Wesson—that's right, the people who make the guns. For several years now, in addition to handguns, Smith & Wesson has been offering shotguns, knives, airguns, ammo and a quality line of leather.

In the speed category, S&W selected the Model B31, a non swivel unform holster made for most medium and large frame revolvers—not, of course, just their own. Barrel length restriction on this model is 4". It features a thumb release with a reinforcing metal plate, 2¼-inch sewn belt loop and sight protector. Finish is restricted to plain black.

In the protection category, the Model B28 was chosen, a unique Clam Shell design for S&W Medium frame revolvers with 4" or 6" barrels. Custom features include optional draw, either conventional or breakaway front, fast forward action with exposed trigger guard, fully protected hammer spur by flap type thumb snap, heavy duty 8 to 9-ounce top grain leather and full lining for added protection, available in plain black finish only.

For concealment, the S&W choice was most unique. To my knowledge, it is the only such production holster made, the Model 39 Hide-A-Holster. Designed for ultimate concealment of small frame 2" barreled revolvers, the Model 39 is concealed under the shirt. Made of soft leather with a rubber backing for comfort,

S&W Model B-28

it features a nylon webbing harness with built in stretch so as not to hinder breathing. The harness is fastened with Velcro as is the safety strap for the holster. In natural plain finish only, it is unique throughout the industry. The gun is positioned under the left breast and, when worn under a loose fitting shirt, is virtually undetectable.

J. M. BUCHEIMER

(Airport Rd., Frederick, Md. 21701)

Last on our list, and by no means least, to use the cliche, is Bucheimer-Clark, one of the oldest and most respected holster making outfits in the nation. Bucheimer-Clark submitted three of their latest designs and three of their best. First on the list is their new Concealer. A flat style holster constructed of seven-ounce leather, the Concealer, as Earl Clark told me, is hand-molded, hand-edged, hand-sanded and burnished at the outer edges. Russet colored models are hand-oiled and polished. Saddle lock stitched, waxed linen thread is used throughout. The Concealer goes on the belt with looped cut-outs, making the rig sufficiently flexible but at the same time pulling it closer to the body than the usual slot. The high riding concealer uses a thumb break with a steel stiffener. The recessed countersunk socket snap guards against cylinder drag and damage to blueing or nickel plating.

Next on the list, still a concealment rig, is the Model 155 Paddle Holster, constructed of Premium 7½-ounce leather with a suede leather paddle using an aluminum stiffener to allow sufficient rigidity without sacrificing conformation to body contours. The important feature of the Bucheimer-Clark Model 155 Paddle is the cutting of the leather to maximize on holster design. The holster is cut length rather than width-wise. It bends over from the bottom, not the side, as is the usual method in holster construction. This unique method forms a natural cup to hold the muzzle but not touch it. As with the Concealer, the snap in the thumb break, reinforced with a blue steel stiffener, is counter-sunk. Also, like the Conceal-

Bucheimer–Concealer

er and the new shoulder holster, it is hand-edged, sanded and burnished on the outer edges, as well as hand oiled and polished. It is available in black or russet, plain or basket weave.

The shoulder rig itself is a radical one, traditional in appearance but innovative in design. The holster is made of 8-8½-ounce premium leather, sewn with waxed linen thread. The gun is kept in the holster by means of a hardened spring steel retainer and a snap locked safety strap. The harness and adjustment lacings are made of Elk. The fully adjustable crossover strap is of nylon. This latest of the Bucheimer-Clark shoulder holsters is available to fit most standard revolvers or autos of any barrel length. For protection and security and a good measure of concealment, it makes for an excellent choice.

Now, the question must be hanging in the back of your mind about which holster maker or type I favor. I'll only say that my holsters come from several different makers and I have several types of holsters for each handgun I own. With that cop-out in mind, I'll shove my pistol in my britches and be on my way.

SHOOTING THE BROWNING HI-POWER

(Continued from page 45)

Shooting from a sandbagged rest at 25 yards, I was able to group five rounds in a tight 15/16 inch, using 115-grain Remington hollowpoints. This ammo, plus some military ball and S&W softpoints, all fed without a hitch, and I had no functioning failures in the 200-odd rounds I ran through a new, fresh-from-the-package test sample. Other writers have reported some jamming when blunt, lead-tipped bullets were used in their Brownings, but polishing the feed ramp proved to be the cure in these guns.

The Hi-Power is the last handgun John M. Browning designed, and it represents some improvement over the earlier Browning design so widely used in 9mm and .45 caliber auto pistols favored by many American gunners today. For instance, the front end of the Hi-Power is solid, providing firm support for better accuracy and eliminating the need for a separate barrel bushing. The Hi-Power also uses a forging integral with the barrel to replace the swinging link and pin used in the earlier design.

With its wide, hand-filling grip, the big Browning is a very comfortable gun to shoot, and it points and handles naturally. The gun has proven its high degree of dependability in practically every country over the years, and its wide current use is a measure of its time-tested excellence. This made-in-Belgium Browning is a high quality beauty you can depend on.

BROWING'S PLINKER THE CHALLENGER II

(Continued from page 53)

shoulders projecting to the rear from the leaf proper. The high, undercut front sight is abundantly wide and resides atop a matted ramp. The sights show up very bold and black in a variety of lighting and background conditions. The only improvement I could wish for would be a deeper rear sight notch.

As is, belying the plinker quality sighting equipment, the Challenger II has an enormous amount of inherent accuracy. Five shot groups fired indoors at 50-feet from the offhand position ran an average of 1½-inches. Two-handed, rested shooting produced groups small enough to be covered by a Kennedy half-dollar. The only ammo on hand was Federal's Hi-Power hollow point loading. If the Challenger II can plunk groups this small onto the target with high-velocity fodder, I can't wait

to see what match-grade ammo will do in the way of grouping ability!

The slim, 6¾-inch barrel *was* a mite skittish, but the fine grip provided by the gun made muzzle control for 5-shot strings no problem at all. I can see a full-house target version of this gun becoming the darling of the paper-punching clan *when* and *if* the Brass at Browning decide to produce such a gun. My suggestion to them would be to keep the grip design intact, add a bull barrel of the same length, and go whole-hog on a muzzle-to-rear sight rib with a good, easy to see, micro-adjustable sight unit of adequate dimensions. Special fitting and polishing of the trigger components might net an extra ounce or two less trigger weight, but I could be happy forevermore with the trigger regularly supplied, if they all match our sample's good characteristics!

For the camper, plinker, outdoorsman, small game hunter or anyone in need of a finely accurate belt gun in rimfire caliber, I can recommend the Challenger II with absolutely no hesitation. The $135.00 price tag buys one whale of a lot of quality construction and materials, plus a ten-shot magazine-full of shooting dependability and accuracy. See your Browning dealer and, if he can keep them in stock, check out the Challenger II.

THE BASICS OF LONG RANGE HANDGUNNING

(Continued from page 31)

the .44 Mag. While effective ballistics are obtained with this powder, it is virtually impossible to achieve clean burning with full loads. Presence of unburned powder granules from the bore and cylinder can have devastating effects on reliable functioning of a handgun. Hogdon H-110 has superseded 2400 for most current applications, with many newer powders gaining favor today.

Elden Carl fired a series for this article using an experimental hourglass target made from two triangular-shaped black paper sheets. This tapering to the center of the target allows the front sight blade width to gauge the proper, consistent hold on the target at any range; by maintaining proper front-to-rear sight alignment, Carl registered consistent hits once the technique and holds were worked out. Firing was done from the braced sitting position, and five-shot groups registered 1¼ inches at fifty yards with 3 to 3½ inches at one hundred yards. These groups rival or exceed results achieved with lever-action deer rifles at the same distances.

Further testing required shooting a single round at a game target within five seconds following a command, simulating field game hunting conditions. Surprisingly, group sizes did not open up significantly, indicating that the kinesthetic "sixth sense" may operate more effectively in a trained handgunner when the pressure of time is involved. To be effective, long-range shots must be delivered within a reasonable time limit; taking too much time can be detrimental to scores. After ten seconds, mental and physiological conditions work against the shooter. It is better to ease off, rest, and start the shot again if the shooter goes stale.

Accomplishments at long range with the handgun are real and attainable. Formal competition in this skill will bring out the best in equipment and human capacity. Handgun clubs can sponsor such events which should attract many shooters who would not otherwise be interested in conventional NRA-type competition. With a little practice and determination, shooters will be amazed at how well they can shoot handguns at one hundred yards. It opens a whole new dimension to handgunning, one that will pay practical dividends in the field.

(Continued from page 19)

Tap the grip off, and trim, if necessary. epoxy mix in the hollow, twist the snap part into it, keeping the part straight on the verticle, and let the cement cure completely. Tap the grip off, and trim, if necessary.

Apply release agent (the last time!) to the other side of the frame, reseat the grip with the cemented part, and let the agent dry. Place the spacing washer over the male part and snap the two parts together. Now apply epoxy mix in the hollow of the other grip (just enough to cover the base). Do not get cement on the working parts of the snaps. Bring the grip up from below the frame and clamp it tightly in this position. Allow the cement to cure at least two days. I keep a sample of each mix, testing it with a sharp point until it is hard before releasing the grip. Epoxy requires several days to reach full strength. Release the grips, clean out all release agent from the inletting and frame, and the job is done.

The snaps should hold securely, and release easily. If one of the snaps should pull loose from the grip during release, probably the wood or the snap base was not roughened or cleaned properly. Grind off the cement, roughen the surfaces, clean, and try again. Avoid using too much cement or getting it inside of the snaps. Measure your epoxy proportions according to directions for rapid curing and high strength. Properly mixed and cured epoxy is stronger than any wood and the bond to metal is also very strong. It is a good idea to coat the unprotected inside wood surfaces with epoxy also to keep out water and oil.

This method sounds more complicated than it is. Once you have properly fitting grips, the whole snap installation should take only a couple of hours, plus curing time. Do not get the epoxy on unfinished wood, because stains or finishes will be kept from penetrating. I bed and install snaps on grip blanks or on finished grips. Incidentally, the best and most perspiration-resistant finish I know of is a two-part marine epoxy varnish which is mixed just before applying and cures hard and smooth. I prefer smooth grips, because sharp checkering is painful when firing magnums. Besides, checkering is unnecessary when the grips fit your hand correctly.

The snaps will pull grips back into position, even if they are pried apart slightly. A set of snaps should last indefinitely since grips are not removed nearly as often as a holster strap.

In the hope of enlisting a grip maker in this project, possibly to offer screwless grips as an option, I contacted several of the better known makers. Unfortunately, these companies have shown no interest and seem content to sell their grips with screws. For the time being, then, it seems that this will have to remain a do-it-yourself project.

For attractiveness and functional perfection, I consider these my finest grips, well worth the effort of making and fitting them. Try installing a set on your favorite revolver. I predict that you will never again be satisfied with ordinary grips.

(Continued from page 59)

ing the sear bar down and disengaging it from the sear. This prevents more than one shot being delivered by a single trigger function.

The manual safety is the unusual and very desirable Star design. When engaged, a cam surface on its shaft engages the tail of the hammer, rotates the hammer *off* the sear, and holds it there. In other designs, even when safetied, the hammer rests on the sear so that a severe impact simply fractures or over-rides the sear to cause firing; in the D, this can't happen, the hammer will break first. The safety also locks the slide forward when engaged, thus preventing a tight holster from moving it out of battery to cause a malfunction. When the gun is *not* cocked, engaging the safety locks both slide and hammer so that neither cocking or opening the breech is possible. Additionally, the safety is pressed upward to hold the slide fully back to remove the slide stop for disassembly.

The slide stop is of Browning type, actuated by hand or by the magazine follower. It automatically holds the slide open after the last shot is fired. The magazine catch is pure Browning, located behind the trigger guard; the best position of all. Grips are checkered walnut and attached by two screws, each threaded directly into the frame; no separate Colt-style screw bushings.

Overall, our sample gun is very nicely finished. Exposed surfaces appear to be better polished than on many other domestic guns. There is some barrel and slide play when in battery, but the amount is not objectionable; in fact, it makes the gun more tolerant of dirt and grit (not to mention ammunition variations) than if parts were fitted tightly in target-gun fashion.

Straight from the box our sample gobbled up R-P and W-W ball cartridges without a bit of trouble. Round-nose, hard-lead-bullet handloads functioned equally well, as did S&W, round-nose, 84-grain, JHP loads. Loads with truncated-cone bullets—the new, Federal 90-grain JHP and some of my hoarded supply of extinct Super Vel—didn't fare so well at first. Bullet noses were occasionally caught by the sharp, lower edge of the barrel portion of the feed ramp. This problem decreased with break-in shooting, but did not entirely disappear until the sharp edge was radiused and the entire feed ramp polished. Five minutes with a Dremel Moto-Tool and green Cratex abrasive points cured the problem permanently.

The gun now has about 300 rounds through it and feeds fine with any factory load and any well-chosen handload. However, when chambering the first round from the magazine, the slide should be drawn back smartly and released to run forward. If one simply thumbs down the slide stop, it will not *always* chamber that first round. Having only 1/16" or less travel before it strikes the cartridge, it sometimes lacks momentum to strip, feed, chamber, and lock. Jerking the slide back all the way gives it greater travel and momentum to insure positive closing on that first round. When fired, the slide comes forward with more energy as it "bounces" off the frame, so feeding is positive.

This is no problem and is not a complaint. In autos, I normally chamber the first round manually, drop the slide, and engage the safety; then I insert the fully-loaded magazine. It's much easier this way, even with big heavy autos, and there is no need for double-handling the magazine.

In the end, I have no complaints with this fine, little, .380 pocket auto. It offers a combination of features not found in any other pocket-type gun, handles well, is nicely finished, and functions as it should; that's good enough for me. If the $175 (about) price seems high, just look around; I can name several other .380s that cost more and offer less.

STOEGER'S LUGER PISTOLS

(Continued from page 56)

properly. If after assembly the trigger doesn't return smartly, you probably have the sear bar retaining screw too light; back it out a hair and try again.

This modern Luger possesses an unusual, manual safety. In appearance and location, it resembles the original, otherwise, there is considerable difference. Up and forward is "fire", down and back is "safe". It is ambidextrous in that the gun may be ordered with a left-hand safety, or the LH unit may be obtained and easily installed on the right side at any time. "S" and "F" markings are placed on both sides of the frame at manufacture, so no problems there. There is no magazine safety, for which I am thankful. There is a positive disconnector to prevent firing out of battery.

The Stoeger .22 Luger handles well. It's a fun gun, not intended for serious competition. But, it's durable, reliable, and accurate enough for all sorts of informal target work, plain plinking, and hunting small game. The fit and finish won't shame a S&W Kit Gun or a Colt MT Woodsman, but the Luger doesn't cost near as much as either of them.

Though the surface finish is clean and

sharp, it doesn't shine much. It's not a true matte finish, but neither is it a gloss finish. I rather like it, since glossy finishes don't turn me on all that much.

The newest model of the Stoeger .22 Luger is fitted with a target-type, fully-adjustable rear sight, and is the real occasion for this dissertation. The first model possessed a simple, fixed, square-notch rear sight integral with the boltways block. It works as well as any fixed sight, and better than some because of its height. However, targeting can be a problem with the best of the type.

The new target-type, rear sight is affixed to the rear of the frame behind the boltways block. The block is made without the fixed sight, so that the line of sight need not change. Placing the target sight thusly also avoids a higher line of sight, keeping it down close to the bore line where it should be.

The sight body is a large, steel block held by lugs and vertical roll pins to the frame. The elevation slide runs vertically in a T-slot in the body, and elevation adjustment is by a large, click-detented, slotted-head screw accessible from the bottom of the sight body; unusual, but effective. A similar windage adjustment screw is reached through a deep hole in the upper right side of the body. It would be more convenient if the screw head wasn't ¼-inch or more below the surface. A large, square-notch, sight leaf overlaps the upper third of the rear of the body. Neatly made, it has unusual, yellow panels on either side of the notch, and they do aid quick alignment in poor light.

Since the sight body lays over the takedown plunger, a hole is drilled to provide access to it. Takedown remains the same, since the sight does not interfere with removal of the boltways unit. The front sight of the target model appears identical to the other, made possible by the lowness of the new rear sight.

Shooting experience to date covers four guns: a very early, fixed sight model, one of the first, short-barrel models, and now one each of current-production, fixed- and target-sighted models. Each has produced good functional reliability over several hundred rounds of both standard- and high-velocity, .22 LR cartridges. Trigger pulls on all have been a bit spongy, but smooth, and easily controlled. Accuracy has been quite acceptable, considering the gun's price. With the earliest gun, I killed several varmints and edible small game out to 75 yards when I did my part. The gun's size and heft make it steadier than many .22 autoloaders for those long, upon-your-hind-legs shots so often necessary in the field.

Among comparable, domestic, .22 autoloaders, only the Ruger Standard Model is priced lower. The fixed-sight Luger goes for $99.95, the target-sighted version for $129.95. In my book, that's a good buy these days, even if you aren't hankering for a "genuine Luger."

SPECIFICATIONS

Manufacturer	*Stoeger Industries*
Model	*Stoeger .22 Luger*
Type	*Toggle-joint autoloading pistol*
Operation	*Delayed blowback*
Caliber	*.22 LR*
Barrel length	*4½", 5½"*
Overall length	*9¾"*
Height	*5⅝"*
Width (at widest point)	*1.53"*
Weight, empty	*30 oz.*
Weight, loaded	*31½ oz.*
Safety	*Manual*
Sights	*Fixed or Fully adjustable target*
Sight radius	*9⅛" (5½" bbl.)*
Rifling	*Checkered wood*
Stocks	*11, plus 1 in chamber*
Cartridge capacity	*Block anodized frame, rest blue*
Finish	*Standard and Target-sighted*
Variations	*4½" & 5½" bbls.*
Distributor	*Stoeger Industries*
Price	*Standard, $99.95; Target $129.95*
Remarks	*Specially designed to duplicate appearance, feel, size and weight of original Luger pistols.*

AMERICAN PISTOL INSTITUTE HANDGUN TRAINING FACILITIES IN ARIZONA

(Continued from page 34)

Judo and other hand to hand martial arts but the tide of crime swelled with youth gangs and individuals who killed and maimed without reason. Again and again the decent citizen tried to locate schools where he could learn to handle handguns. By this time there were many "schools" but they all lacked facilities or knowledgeable instructors who knew that conventional training methods or Army training methods would not work. Police, politicians and liberals urged the decent citizen to turn away from firearms and to give up attempting to defend himself. If he gave in to attack he would not be harmed. Statistics bluntly refute this thinking. Sales of rifles, handguns and shotguns skyrocketed because people were afraid to walk the streets or travel unarmed. Accidents occurred and were seized upon by anti-gun people who cited these accidents as a good reason to disarm Americans. The idea that accidents happened because of lack of firearms training has never been voiced. Simple, short, instructive and constructive training courses could have averted and prevented most of these accidents.

About 1967 the situation commenced to change as a result of the pressures of crime upon both law enforcement personnel and the citizen. People wanted and needed a training program based upon modern techniques. People wanted to carry and use the handgun efficiently and safely. Many of these people approached Jeff Cooper. He responded with short, personal training courses and, like so many professional shooters, he still did not realize the depth of involvement that

lay before him. He did not realize the tremendous need for practical firearms training by the American public.

At this point it is reasonable to ask why didn't the public go to police departments, NRA instructors and classes and similar organizations. They did. Unfortunately, like the small bore shooter who is dumped onto a mountain side and told to hunt, there is very little relationship between match target shooting and defensive selective shooting. There is even less contact between traditional FBI and police training and the real thing. The American public and many law enforcement officers wanted and needed practical firearms training based upon empirical knowledge, not outdated traditional knowledge.

Gradually, over a period of two or three years, Jeff Cooper developed training programs as a result of the constantly increasing pressure brought to bear upon him for realistic firearms training. He traveled and lectured and discussed firearms training and held special schools all over the country at which he taught his training concepts. Predictably, police departments and traditionalists did not ask for help nor did they partake of his knowledge. At that time, the cry for help came from the individual, not from groups or departments.

I was present at many of his early schools and matches because I had long been an advocate of his basic concepts that tied in closely with my thinking. I listened to a steady stream of comments, such as "damn fool will get everyone killed," "most dangerous training I have ever seen," "interesting but highly and utterly impractical," "if I wanted to get killed I could have stayed at home." I watched federal personnel look, listen and leave with a knowing smile on their faces—they knew better than to pit their conventional skills against his "new and untried" training program.

Finally, having determined that a large and sincere need existed for an entirely new type of training school, Jeff realized that nothing truly constructive could be accomplished until he had the necessary facilities. He needed a coordinated and well thought out training center. Only through such a layout could he so instruct an individual that the person could control a dangerous situation. Only by means of such a training center could an individual learn his capabilities. He had to have a place where he could literally create such a facility unhampered by real estate developments, people, archaic laws and other hindrances commonly found near urban centers. At that time he lived in Big Bear Lake, California but the area lacked the type of land required for such a training center. Jeff moved far afield and traveled and searched until about three years ago he found an area that appeared to be ideal.

Climate was important. The school should not shut down during winter months. There should not be too much rain. The general weather could be warm, even hot, but must not be uncomfortable. Nights should be cool or cold. Jeff located just such a spot outside of Paulden, Arizona which lies about 35 miles north of Prescott. About 135 acres of land make up the facility at an elevation of around 5,000 feet. Four and one-half miles west of Highway 89 and two miles south of Paulden, the Gunsite-Raven facility lies high on a rise in the desert approached across the desert by a still rather primitive road. This road is constantly being improved and graded and surfaced but it will be another year or two before one can casually drive over it. The view is superb from any spot on the property but the high ground where Jeff located the temporary house, the barn, the windmill and wind generator provides the guest with breathtaking vistas in all directions. There are no outside power or telephone lines. Contact with the outside world is carried on by radio telephone. Lights out at nine. The diesel generator starts up at six in the morning.

There are no facilities at Gunsite-Raven for students with the exception of the camping area where I pitched my tent. It can accommodate several trailers or tents but the area is restricted and all units must be completely self contained. Students will stay at motels in Paulden and Chino Valley but reservations must be made well in advance. Lunches will be catered by Gunsite-Raven. No other services are or will be available. The Coopers will make reservations at the motels for students if they so request on their applications for attendance at the school.

Six long years of searching for the right place have now jelled into what I consider to be the most modern training facility in the country for handgun and rifle. The shotgun facilities will be built early in 1977 and should be ready for students by late summer. I do not have the space nor is this the place to dwell upon the humorous, the sad, the frustrations and the work that went into the creation of Gunsite-Raven.

Why the name? Gunsite is rather obvious. Janelle, Jeff's remarkable wife, comes from a long line of Scandanavian sea faring people. One of her ancestors—way back when—used the sign of the Raven as a rallying point for the ships of his fleet carrying the huge black raven on the mainsail of his ship. Similarly, the facility uses this symbol as a guide that may be seen far across the desert on both windmills. It serves as a focal point for those people who wish to learn survival in today's perilous world. It is the place where a grandmother, a girl, a youngster, a doctor, a lawyer, a sportsman, a hunter, a combat competitor can learn the most basic lesson of all—a handgun can make any citizen the equal of any felon. It provides personal safety in this time of abnormal crime.

I have repeatedly mentioned handguns. Cooper's training programs encompass not only handguns but rifles and, by 1977, shotguns. Needless to say, his training concepts for rifles and shotguns are as empirically practical as his handgun courses of fire. Despite his reputation as an automatic pistol man, he shows no partiality towards pistols during his training.

The facility consists of The Square, The Fun House, The Rifle Range and The Dry Wash. I will deal in detail with each of these in subsequent features. Important as they are, the most important basic of the entire Gunsite-Raven Training Facility is the staff. It is the training people that make this school so important. The key men are Bill Garland, Bruce Nelson and Jim Swanson. They back up Jeff Cooper. A more practical group of men has never before been brought together as instructors for the American civilian handgun and rifle shooter.

Just as a pair of handmade shoes is expensive or a special, personalized car or boat or pair of skis, one should not consider applying to Gunsite-Raven for admission to the school without realizing that instruction and guidance and personal attention of this kind is expensive. Tuition fees commence at $100 for a two day basic course. From there they run into $250 to $300 for more lengthy and advanced courses. From that point on the sky is the limit. A student may wish to be a part of a 20 student class. Another may insist upon personal instruction from Jeff Cooper for a 10 day period and gladly pay a $2,000 fee. Tuition varies also in rifle instruction. As soon as the shotgun facilities have been completed tuition fees will be set thus giving the American handgunner, the American rifleman and the American shotgunner an unprecedented training facility that has no equal in concept or in the quality and imagination of the teaching staff.

In the next issue I will discuss the handgun training program and the application of The Square and The Fun House to this training concept.

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a deeper, more lustrous blue color than the typically blackish blue found on most competitive guns. Naturally, the quality of a firearm's finish is subjective, but keep in mind whose products all the other gun companies started out trying to imitate.

Consider a premium gun. If the Magnum Lawman is a workhorse Colt, the Trooper MKIII is a thoroughbred. Here is a .357 Magnum that can genuinely improve any shooter's accuracy. The Trooper has a wide target hammer and smooth target trigger, cut checkered walnut target grips, adjustable rear sight and a ramp front sight. Many of these features are available on other guns only as extra-cost options. Some are not available at all. Every Trooper is proof-fired with high-pressure ammo at the factory, which is why Colt can recommend all major brands of ammunition. Unlike any competitive revolver, the Trooper's accuracy is checked on Colt's exclusive laser boresighting system that consistently holds center-of-impact variability to within one tenth of an inch.

Colt Trooper MKIII .357 Magnum. 6" (shown) or 4" barrel. Also handles .38 Special. Available in nickel finish. Walnut target grips, fully adjustable rear sight, ramp front sight, shrouded ejector rod.

Colt Lawman MKIII .357 Magnum double action revolver, 4" (shown) or 2" barrel. Also fires .38 Special. Available in nickel finish. Cut checkered American Walnut grips.

Lightweight, but heavy duty. While the Colt Lawman's 35 ounces (with the four-inch barrel) make it quick and easy to use, its rugged construction invites comparison with other makes. It has a wider, all-steel frame, thicker cylinder walls, an oversized cylinder ratchet and a heavier duty latch locking pin than most other revolvers of its caliber. If the ejector rod in some revolvers becomes damaged, it can render the gun useless – not so with the Colt free floating ejector rod. So a Colt can take abuse and still perform. These are just a few exclusive Colt features that make the Lawman the perfect "workhorse" revolver for both on and off-duty service today.

Thumb latch pulls toward rear on a Colt, precluding accidental cylinder release.

Nothing else looks like a Colt. While the Colt Royal Bluing Process remains a well kept secret, this distinctive metal finish is acclaimed worldwide. Colt handguns possess

The choice is yours. When looking for a .357 Magnum, at some point you'll pick up a Colt. You'll like its looks, you'll love its feel, you'll understand its price. Then you'll choose. If you decide you can't afford less than the finest quality in a .357 Magnum, you'll decide you can't afford less than a Colt.

Hand honing and fitting give a Colt revolver its characteristic velvet smooth action.

COLT – an American heritage