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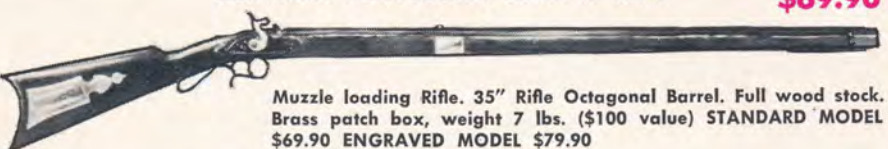
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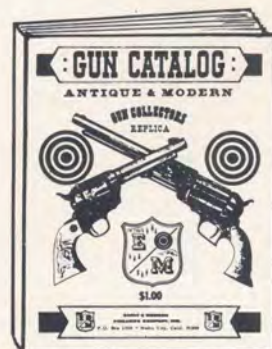


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CONTEST WINNERS

CATCHING UP on reporting the winners of our monthly contests, we are happy to announce that Mr. Chester Murszewski of Buffalo, N. Y. won the August High Standard gun; The September contest is still held up because of red tape; Capt. Norm Fleig, USAF, of Midwest City, Okla., is shooting his Shadow Trap gun won in our October contest; Mr. James Lask of Nashville, Tenn., is the winner of the Ranger Arms rifle offered in the November contest.

GUNS AND CRIME

Recently, Vice-President Spiro Agnew announced a new "high impact anti-crime program." This program will: educate the public about protecting life and property; improve police equipment and training; and institute special programs for prosecution of offenders.

Notice that gun legislation was not mentioned! Perhaps one reason is that someone has finally given some thought to these statistics (offered by none other than anti-gun New York Police Commissioner Pat Murphy): Last year, in New York, there were 94,000 felony arrests. Only 552 of them went to trial! The rest of them were "disposed of." This means, they were dismissed outright, or reduced to lesser penalties, misdemeanors, via plea bargaining.

So, it appears, Mayor Lindsay's "Fun City" is really "Gun City," for criminals, that is, who realize that not only can you use a gun for crime in New York, chances are that you can get away with it!

THE COVER

Our cover photo, a handsome 1842 Aston U.S. martial pistol, taken by James Laird and Jimmy Lau, was submitted by E. Dixon Larson. It not only appears on our cover, but also leads off the feature article on U.S. Martial pistols, beginning on page 37.

JUNE, 1972

Vol. XVIII, No. 2-06

George E. von Rosen
Publisher

Guns

FINEST IN THE FIREARMS FIELD

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EDITORIAL OFFICES: Jerome Rakusan, 8150 N. Central Park, Skokie, Ill. 60076, ORchard 5-5602.
NATIONAL ADV. OFFICES: 8150 N. Central Park Ave., Skokie, Ill. 60076. ORchard 5-6010.

GUNS Magazine is published monthly by Publishers' Development Corp., 8150 N. Central Park Avenue, Skokie, Illinois 60076. Second class postage paid at Skokie, Illinois and at additional mailing offices. SUBSCRIPTIONS: One year (12 issues), \$7.50. Single monthly copies, 75c. CHANGE OF ADDRESS: Four weeks' notice required on all changes. Send old address as well as new. CONTRIBUTORS submitting manuscripts, photographs or drawings do so at their own risk. Material cannot be returned unless accompanied by sufficient postage. PAYMENT will be made at rates current at time of publication and will cover reproduction in any or all GUNS Magazine editions. ADVERTISING RATES furnished on request. Reproduction or use of any portion of this magazine in any manner, without written permission, is prohibited. All rights reserved. Title to this publication passes to subscriber only on delivery to his address.



News from the...

SHOOTERS CLUB OF AMERICA

Dedicated to the Constitutional Right of Every Citizen to Keep and Bear Arms

THE S.C.A. WANTS POSITIVE ACTION

The F.B.I. has compiled a list of major crime variables. The eleven factors they consider to be most important are:

1. "Density and size of the community population and the major metropolitan area of which it is a part."
2. "Composition of the population with reference particularly to age, sex and race."
3. "Economic status and mores of the population."
4. "Relative stability of population, including commuters, seasonal and other transient types."
5. "Climate, including seasonal weather conditions."
6. "Educational, recreational, and religious characteristics."
7. "Effective strength of the police force."
8. "Standards governing appointments to the police force."
9. "Policies of the prosecuting officials and the courts."
10. "Attitude of the public toward law enforcement problems."
11. "The administrative and investigative efficiency of the local law enforcement agency, including the degree of the adherence to crime reporting standards."

Have you noticed anything about this F.B.I. list of eleven major crime variables? There is nothing mentioned about firearms. An F.B.I. oversight? Hardly. According to the F.B.I. reports only 1/2 of 1% of all firearms are involved in a major crime. If you look at the black and white facts you see we do have a major crime problem, but we do NOT have a firearms problem.

The anti-firearms lobby would like to confiscate all handguns and register all long guns. It has been estimated that if this were attempted it would cost 2 1/2 Billion dollars the first year, and a half billion every year after. The end result would be another lucrative black market for organized crime.

I have a better idea. Lets take that 2 1/2 Billion dollars and use it in a positive, long range constructive manner so we and our children can have real value. We can attack the basic factors of crime and correct them. Let's take it point by point.

1. We can use the money for decent low rent housing spread over a whole community. This would be a constructive approach.
2. We can use the money to break up the Puerto Rican and Black ghettos. This would be a constructive approach.
3. We can use the money to help people acquire work skills so they can break the lower class welfare-crime chain. This would be a constructive approach.
4. We can use the money to promote community feeling and

pride in local organizations. This would be a constructive approach.

6. We can use the money to improve education for the people who need it most. This would be a constructive approach.

7. We can use the money to build bigger police forces and raise salaries so the best men are attracted to the job. This would be a constructive approach.

8. We can use the money so police are appointed and promoted by merit rather than political pull and pay-offs. This would be a constructive approach.

9. We can use the money to get better prosecuting officials and judges. Then organized crime will not be able to bribe their way out of everything like now. This would be a constructive approach.

10. We can use the money to raise the level of police and courts as suggested above. When this happens the big city populations will stop thinking of the police and courts as just different kinds of criminals. The police will start to receive genuine respect and crime fighting co-operation. This would be a constructive approach.

11. If all the above are done then the efficiency of our police and courts would advance by leaps and bounds. It has been my personal opinion for many years that organized crime could be cut by 75% in three years if all local and federal police and courts were completely honest and not open to money bribes. If we cut organized crime by 75% this would save the American tax payer and consumer (you and I) an estimated 15 Billion dollars per year! If this could be accomplished it would be fantastic.

The difference between SHOOTERS CLUB OF AMERICA and the anti-firearms lobby is clear. The anti-firearms lobby wants a stupid, insane course of action that would only benefit the crime syndicate. For the anti-firearms lobby the facts mean nothing. They want to waste our national resources and energy in a mad drive to destroy our constitution.

THE SHOOTERS CLUB OF AMERICA promotes a rational, morally correct approach to help overcome our problems. But the price of freedom and Democracy is a constant vigil. We need your help and money to see that the anti-firearms lobby is always blocked by the facts and cannot spread its cancerous growth any farther. Use the postage paid envelope opposite this page and join the crusade today.

Col. Edward Becker

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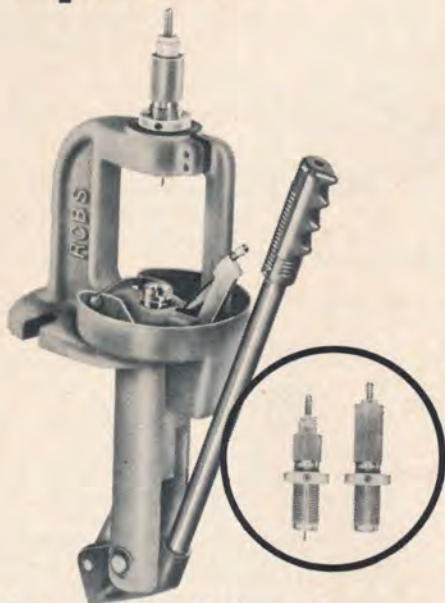
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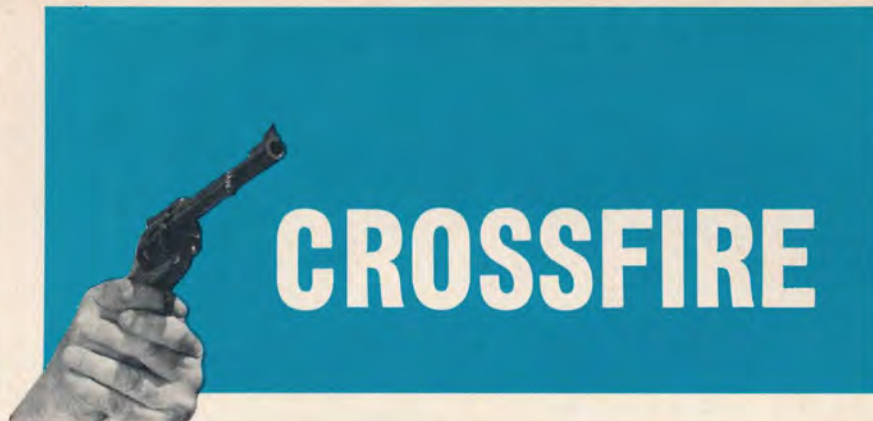
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Black Powder Arms

I am a hunter and a gun nut, but most hunters turn out to be gun nuts I guess. I've been very interested in black powder rifles and handguns. I don't own one yet, but I'm looking. The biggest problem seems to be in the selection, because there are so many to choose from. I would like to see some articles comparing the various makes.

Your magazine covers just about everything. I would think anyone interested in guns would find it in your magazine.

Dennis Ganzen
Seymour, Wis.

Charles Warner Saluted

I read, with extreme gratification, your comments on the successful ratification of Amendment three by the electorate of New Mexico in our recent Constitutional election. These comments were embodied in your February issue of "Trigger Talk."

You should be advised of the one individual in New Mexico that did a super-human job, not only on dissemination of favorable information concerning the Amendment, but on seeing to it that the amendment was written in a manner to strengthen the right of legitimate gun ownership and use, is Mr. Charles L. Warner of Los Alamos.

Many others in the state worked diligently to see that the amendment was passed. But Mr. Warner gave unstintingly of his time, effort and money to see that this worthy end was achieved.

Charles D. Brooks
Taos, New Mexico

Saturday Night Special

Any gun nut can tell you what a "Saturday Night Special" is—it's a cheaply manufactured handgun that has no value to it at all. But, as I see

it, Senators and Congressmen are classifying any handgun that does not serve the purpose as a hunting or target arm a "Saturday Night Special". There are a countless number of pistols that are used every day for sport shooting and home defense that are collector's items today. Is it fair for our own government people to tell us what a "Saturday Night Special" is?

D. Kirk Stretton
Vicksburg, Mich.

Custer's Last Stand

I found only one flaw in your Indian article and it isn't the first or the last time that it will be made. James E. Serven states that a "horde of well armed Sioux and Cheyenne warriors" were the main reason Custer was defeated. My greatgrandfathers and their fathers were not armed with Winchesters as it is portrayed in movies and other articles. My ancestor, Soldierwolf, had only a stone war club, while my other ancestor, Kills-night and his brother were armed with only bows and arrows. They were also in the battle at Rosebud Creek where General Crook had to run with his tail between his legs back to his base camp. Custer was defeated because of the courage of the Indian and not because he was outnumbered by heavily armed Indians. I hope that from now on people won't say that Custer was poorly armed and that every single Indian was armed with a repeating Winchester.

William Harris
Tacoma, Wash.

Writing Style

In regard to your editorial comment on "Frontier Firearms" by Chauncey Thomas (January, 1972); yes, I saw the "style of modern gun writing has changed considerably", but as I see it, not for the best. Mr. Thomas' story

is plain, informative, entertaining and devoid of the brassy verbiage affected by today's Askinses, Coopers, Keiths and so on. No aspersion on these gentlemen's technical knowledge is meant, of course.

Capt. Luciano Seno
Rome, Italy

Col. Askins, we at H. P. White Laboratory would like to compliment you on your article which appears in the March 1972 issue of Guns.

Please note that the decision to fire test handguns to the 5,000 round level was made to insure a maximum failure rate for purposes of developing failure data. Only after analysis of the results of this testing did we feel justified in recommending that the repetitive firing test be limited to 3,000 rounds, since testing above this level had little effect on the overall results.

The above comment in no way detracts from your article as the only article that we have read to date which shows evidence of the author having read completely and objectively the extensive data collected and presented in our report.

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HANDLOADING BENCH

By C. GEORGE CHARLES

AVID handgunners seem to burn up more ammunition than other members of the capbusting fraternity. There's something about a good quality gun, especially an autoloader, that makes you want to keep on shooting as long as the light, the targets, and the ammo hold out. Now, with a .22 rimfire that isn't so bad, even if you're paying full retail price for those clean, fresh factory cartridges, you can shoot all afternoon for less than five bucks. Even the most expensive rimfire fodder (excepting the Magnum, of course) won't run much over two cents a round.

Center-fires are another matter, though. Price is the bad news, with even the cheapest varieties running well over ten cents per cartridge, and the big .44 and .45 boomers running as much as a quarter each.

Handloading is the only way out, especially since it gets the price of even the loudest short-gun round down to as little as a couple cents each. At that price, nobody minds, and the wallet dent isn't much worse than the .22's. But, loading enough ammo for a weekend's fun can get to be a problem with the average handloading setup. Take the average single-station press with dies and measure and scale. If you're like most, you'll need a full and uninterrupted evening—from early dinner 'till late bedtime—to run off a weekend's worth of cartridges. And, have you tried lately to get a *full evening* free for that purpose? Between mama, the kids, the neighbors, phone calls, Gun-smoke, the Late Show, and the like, it just ain't likely.

How would you like to rig that loading bench so cranking out 400 rounds or more of your favorite caliber takes hardly more than a single hour? No, I'm not dreaming. The means has been around since the early 1930's in the form of the Star Progressive Reloader. Once known and used mainly by custom loaders and police departments, this tool is

not out of reach of many a handloader.

The Star Standard Model costs \$240 and comes only in .38 Special caliber. Its one shortcoming is that it can't be converted to other calibers. For \$275 you can get the Progressive Model which converts readily to any handgun caliber or short rifle number like the .30 Carbine or .44-40. That's complete for one caliber—no extra measure, dies, scale or other odds and ends to buy. Looked at that way, and considering the time they save, these tools are a bargain.

Very complete instructions are packed with the tools. Primers and powder are fed automatically (an automatic case feed is a relatively low cost option) and bullets and cases must be hand-fed. Once all of the tool stations are filled with cases, each stroke of the handle produces a fully loaded cartridge. Nothing could be simpler or quicker. With practice, one man can crank out 400 rounds per hour. Add an experienced helper and twice that rate can be achieved.

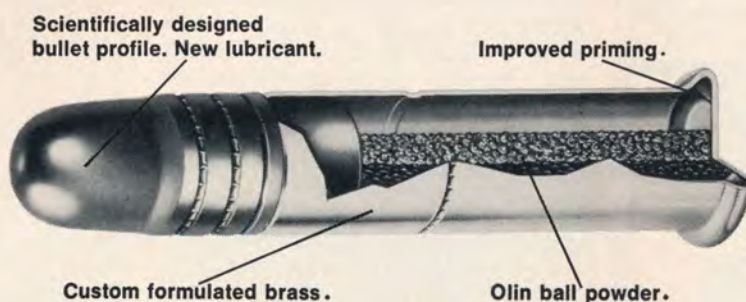
Over the years I've owned probably a dozen Star tools in various calibers. Kept clean and properly adjusted, they seem to work forever. One of mine was still doing fine when I let it go, after loading over 1½ million rounds. Try that with anything else.

This isn't meant to be an accolade to Star tools, but simply to point out that one represents an excellent investment if you do a lot of handgun shooting. And, incidentally, Star makes a very fine lubricator-sizer that works twice as fast as the usual type. In it, bullets are pushed straight through the sizing die, being lubricated on the way, and drop out the bottom. In use, you simply drop a bullet in the die mouth and lower the operating handle. It spits out sized and lubed bullets just as fast as you can do that. And, it costs only a few bucks more than the conventional type. If you can't quite hack the cost of a Star, any one of the better turret-

(Continued on page 47)

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STEVENSON on Hand Guns

Autopistol Controls, IV

WE HAVE meandered along for three months now describing the layout and function of autopistol controls in a deliberately noncritical fashion. The goal was to understand how each of them worked rather than to favor one setup over another. Once the various possibilities are understood, however, the problem is to distinguish the desirable ones from the lemons, to choose or to know how to choose a pistol whose controls are, if not optimal, at least tolerable; a piece which, mechanically, one can live with comfortably. Obviously there is ample room here for disagreement. A control layout which one shooter regards as ideal will be viewed by another as inconscionable. And largely it will be a tradeoff. You may have to sacrifice your preferences in magazine latches in favor of a safety you really have faith in; or, to narrow it down, you may sacrifice a safety which is mechanically faultless in favor of one which is more conveniently located

for fast disengagement. The subject is largely subjective, and the final choice is very much a private one. I merely offer my own thoughts here for what they may be worth.

For the target shooter, the only imperative is that the slide remain open after the last shot, and that it stay open when the magazine is removed, this for range safety reasons. Since he will generally choose his battery from a very restricted list of highly specialized guns which embody these characteristics, there is not much left to be said. I have never met a target shooter who used the safety on his pistols, and I've never used the safety on my target guns, so in fact they might as well not be there. There is never a rush to reload in target shooting, so it matters not a whit where the magazine latch is situated, so long as it holds the magazine firmly in place for a uniform feed pattern from lips to chamber.

Hunters will ordinarily choose a



The top-of-the-line Hammerli employs a pushbutton magazine release. The author feels that Hammerli wouldn't if the release caused feed problems.

revolver, and in any event are far more interested in the power and accuracy of their arms than in the dexterity with which they may be manipulated. So for the purposes of this discussion we may ignore them as well.

Householders and plinkers, whose guns may be used by other members of the family, are likewise, in my opinion, far better off with a double action revolver than with any other type of handgun. For backpackers the tradeoff is between accuracy and lightness, with action type only a tangential consideration. Most cops are obliged by regulations to carry a cylinder gun, but when they have a choice, the self loader is more and more often the preferred arm of late. It is to the police, then, and to others who carry a semiauto for serious purpose that the pistol's control layout is important, and it is to them that this column is directed.

A number of factors intrude when we set about choosing a self-feeder for self defense. Primary among them are reliability, initial magazine capacity, and the terminal effectiveness of the cartridge—all these we shall ignore. The single action vs. double action controversy was thrashed over at length in the February, 1971, column and likewise has no place here.

The subject under discussion is the controls, and from this perspective we are looking for a gun which is safe when the safety is on, which is fast to get into action from a safe-carry condition, which is handily made safe again when the action lapses, and which is fast to reload, and this in haste. I also prefer the slide to stay open on the last shot so as to warn me that it is empty, and to speed reloading in case I have forgotten to count my shots. If there is a convenient, functional lever to release the slide to run forward again, that is another point in the gun's favor.

The conclusions that follow are:

- (1) we insist on a slide holdopen.
- (2) we prefer an external slide release, providing it in fact releases.
- (3) the bulk of the following discussion will concern magazine releases this month, and safeties next month.

The most desirable magazine release, in my view, is the Colt/Browning type pushbutton mounted on the left side of the frame just to the rear of the trigger, and conveniently available to the thumb of a righthanded shooter or to the trigger finger of a lefty. The best-known pistols which employ it are the 1911 and derivatives, the Browning GP, the Walther PP series, the Tokarev, the S & W M39, and most Star and Llama semiautos.

Any other commonly encountered release system requires the use of two hands at a time when the free hand ought to be going for the spare magazine.

Almost as popular as the Colt type thumb-button is the heel-of-butt magazine release which hooks over the bottom rear corner of the magazine baseplate. It is to be found on the Walther P.38 and TPH, the Beretta M1934, the SIG, the Czech M1952, the Makarov, and a host of other continental pistols. It is definitely a two-handed proposition and I in no way care for it.

This rig is often defended by the Europeans with two arguments: First, they say, the Colt type pushbutton is apt to be depressed inadvertently, either by the hand of the shooter or by the holster, and dump the magazine inopportunely. The heel-of-butt arrangement is surer—it holds the magazine firmly in place until it is deliberately disengaged by the thumb of the left hand. This sounds reasonable enough. Personal experience,



Early production Astra Constables did have an overall and a large, unprotected release that was apt to ditch its cargo; this problem has since been corrected.

however, teaches me somewhat the contrary. I have carried a wide variety of pushbutton-release pistols in an incredible hodge-podge of holsters, and have never had one drop the mag, although I don't doubt that a holster could be designed to accomplish this trick. The only pistol I have ever encountered which seemed generically prone to this affliction was an early-production example of the Astra Constable, which had an overall and quite unshielded release button. This, however, was easily corrected, and current production, if anything, overcorrects it. Most pistols of this type have release buttons which are adequately shielded against accidental release, yet convenient to the thumb.

Curiously enough, the only pistols with which I have had a problem of

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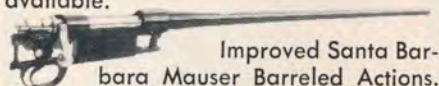


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inadvertant magazine release have had the supposedly foolproof heel-of-butt hook arrangement. Carrying the gun in a right-hip rig, I've snubbed these things off on car seats when sitting down. I have also disengaged them with the heel of my bracing hand when going into prone position. I wouldn't condemn heel-of-butt releases across the board for this reason. However, my experience is distinctly to the effect that this rig is more apt to ditch the mag inadvertently than is the Colt/Browning release.

The second argument which Europeans bring to bear in favor of the heel-of-butt release is that it holds the magazine dead solid at its uppermost possible position in the frame, thus ensuring a uniform feed pattern. Pushbutton releases, they claim, allow the magazine some vertical play in the frame, which in turn causes jams. Again this is reasonable but speculative. The world's three most widely distributed military pistols over the years—the 1911, the Browning GP, and the Luger—all have pushbutton releases. Of these only the Luger has proven jam prone, and its problems in this respect are certainly not due to its magazine release.

It would seem particularly significant to note that Smith & Wesson employs a pushbutton magazine release on their Model 52 "Master" autoloader. And certainly if any pistol is going to have critical problems with feed pattern, it will be one which tries to function with .38 wadcutters. It can be countered that the magazine release on the Model 52 was simply carried along from its military anteced-

ent, the 9mm Model 39. To meet this argument we need merely point out that the Model 41, which was designed from the ground up as a match target pistol for the hypochondriac .22 LR also mounts a pushbutton release, as does the finest gun of its type, the Hämmerli Model 208. Those who would contend that the release on the Model 208 was simply a carry-over from its parent design, the Walther Olympia, which itself was something of a fleshed-up PP, will have to deal with a brace of sticky observations: first, that Hämmerli, over the years,



Some critics of the pushbutton release claim that it will dump the magazine inadvertently; given a decent gun and a less-than-perverse holster, this will never happen. Illustrated is a PPK in Seventrees leather.

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changed just about everything on the Olympia except the magazine latch, and that Walther's Model 32 target pistol, which the Olympia replaced, had a heel-of-butt release. If there were a discernable functional advantage to a heel-of-butt release, Walther would have put one on the Olympia, Hämmerli would have put one on the 208, Smith would have garnished the Model 41 with one, and probably the Model 52 as well.

Here again we have an example of practical experience negating logic. The latter, some would say, is a particularly European vice, an ineradicable residue of the Enlightenment, while the former is an indigenous American virtue. But, wary of mounting new speculative heights, we had



The new Beretta Model 90 opts for a Colt-type pushbutton release. This is unusual among d.a.'s for its frame-mounted full-cock hammer blocks the safety.

rather not go into all that.

The current vogue which heel-of-butt releases enjoy is probably due far more to their being easier to manufacture and to adjust in assembly than to any widespread acceptance in either military or gunmaking circles of their supposed practical superiority over the pushbutton type.

The notion of their superiority is, as far as I am concerned, rubbish. A heel-of-butt release sometimes makes a gun prone to dump its magazine inopportunely, and always introduces a

substantial lag time in the reloading operation. I prefer a good pushbutton release across the board, although occasionally I will overrule my preferences on this score in order to get a gun, such as the SIG, which is markedly superior in other respects.

As for the low-mounted crossbolt release such as that on the Beretta Model 951, it is a bother, and was put on for no other reason than that the gun's designer, old Tullio Marengoni, a remarkable man, had this unfortunate thing about crossbolts. Beretta's first entirely post-Marengoni pistol, the Model 90, has sensibly been provided with a Colt-type pushbutton release.

Having set forth our preferences in magazine releases with precious little ambiguity, and having, I believe, successfully defended these preferences, we can now proceed with safeties. This we shall do next month.



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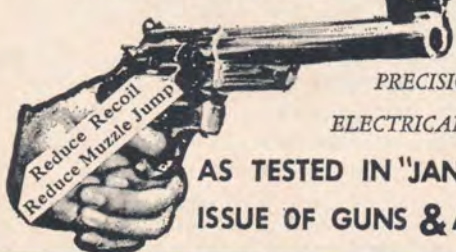
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By CARL WOLFF

National Hunting and Fishing Day

The Senate Caucus Room here on Capitol Hill is a big place, but with some 100 conservation and sportsmen leaders representing 50 national organizations it was still less than half full. There was a rap on the speaker's stand. "Gentlemen", said Daniel Poole, President of the Wildlife Management Institute, "Senator Thomas McIntyre." Flash bulbs popped and the organizational meeting of the Committee for "National Hunting and Fishing Day" was underway.

"Today, both our physical and social environments have become deadly enemies. How did it happen? Obviously

some of the things we've been doing to our environments that seemed right all along must have been wrong," Senator McIntyre said.

"We didn't realize that each time we do something to the environment, it in turn does something to us. Until each one of us understands that we are not separate from our environments but part of them, we will fail to see the direct relationship between our environments, our health, our behavior, and even our ability to understand ourselves.

"Well, all along there were some Americans who did understand. Some Americans who long ago realized that Nature was not inexhaustible, that there existed in it a delicate ecological balance that should not—must not—be upset . . . and that man's survival and well-being—and the survival and tranquility of the society of man—depended upon a wholesome respect, yes, an affection, for that balanced ecosystem.

"I speak of the outdoor sportsmen, those Americans who not only stand in awe of Nature, but love it and are dedicated to its preservation.

"It was the outdoorsmen who—decades ago—sounded the first alarms about the raping of the land, the pillaging of forests, the pollution of lakes and streams and oceans, the indiscriminate slaughter of fish and wildlife. And it was they—even then—who were trying to do something to stop it.

"Now the outdoorsmen, the hunter, shooter and (Continued on page 55)



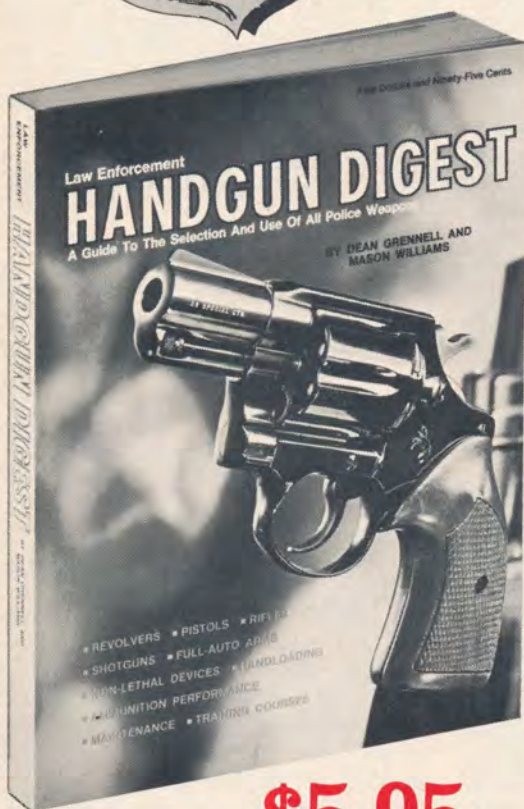
Pictured, left to right: Charles Dickey, Dir. of Promotion for the National Shooting Sports Foundation; Daniel Poole, President of the Wildlife Management Institute; Senator Thomas McIntyre; Warren Page, Executive Vice President of NSSF; Cliff Morrow, Dir. of Hunting and Conservation for the National Rifle Assoc. The chart shows the states that have already enacted a National Hunting and Fishing Day.

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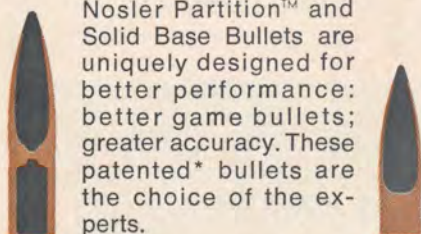
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



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POINT BLANK

By COL. CHARLES ASKINS

New Guns 'n Gear For '72

THE National Sporting Goods Show is staged annually and is usually in Chicago. It is open only to sporting goods merchants and all the major arms and ammunitions manufacturers attend and set up booths to show off their latest. It is held during February and everything that is new for the forthcoming year is put on display. Our sister publication, *SHOOTING INDUSTRY*, a trade magazine which circulates to all the sporting goods dealers in North America, carries a feature story on the extravaganza. This year our Editor has decided that *GUNS* readers are entitled to a run-down on the highlights of the '72 exhibition.

It will help if you understand that there were 1,200 exhibitors, with more than 1,000 booths and some 1,600 product items. These ranged from jock straps to Chinese ping-pong, with only a little more than 100 devoted to guns and related gear. The executive secretary of the association said there were 28,000 visiting dealers at this oversized county fair. The show was staged in McCormick Place, a building which covers 14 acres. The structure is so large you may lay out three complete football fields side-by-side. It can be appreciated that it takes some time to look at this vast outlay of recreational gear.

Of those items which really were new, inviting, titillating and outstanding, the new Smith & Wesson Models 64, 66 and 67 revolvers in .38 Special and .357 Magnum calibers made entirely of stainless steel are surely worthy of early mention. The tremendous popularity of the Model 60, the first of the S&W revolvers to be manufactured in the rust-proof steel, undoubtedly influenced the company to produce the newcomers. Along with these new handguns is the exciting news that Winchester has at long last listened to a clamor which has scarcely abated over the past 75 years for a .22 lever action rifle. That firearm is now a reality. The Model 9422 has been designed along the lines of its

famous forebearer, the trusty Model 94 .30-.30. I would speculate it will be instantly popular. Winchester has likewise reinstated the wonderfully popular old Model 12 pump repeating shotgun. Again, this has been due to an insistence on the part of wing gunners who would not accept any substitute.

The Remington Company has also rung the bell with a Model 870 pump repeater for the 20 gauge shell. This sturdy pump gun was originally designed around the 12 gauge cartridge. The newcomer is a scaled down version of the original, designed specifically around the 20 gauge shell. It weighs a feathery 6¼ pounds and will be extremely popular in the hands of bobwhite, snipe, grouse and dove gunners.

Once, a long time ago, the Savage Company made their dandy over/under rifle-shotgun for the excellent .30-.30 cartridge and the 20 gauge shotshell, but for some obscure reason this dandy combo was dropped. Now it has been reinstated and you simply cannot beat this pair of cartridges together in the one firearm. Savage, sole importers of the marvelous Eley .22 target ammo, stated at the show that they will have a greater supply of the highly popular loading this year.

Harrington & Richardson last year sold 10,000 of the Officer's Model 1873 rifle in .45-70 caliber. This year they have two more of these Model '73 weapons but these are carbines. One commemorates the Battle of the Little Big Horn, while the other is a plain Cavalry carbine. In 1976, the Centennial of the Little Big Horn massacre, the company will issue a Model '73 for every man killed there, with his name, rank and organization engraved on each rifle. Certainly a handsome and thoughtful tribute.

The Marlin Company is now making their Model 336 rifle in .45-70 caliber. They refer to it as the "Model 1895" after the last rifle which they

chambered for this grand old cartridge. Marlin is also in full production of its sturdy new all-steel 12 gauge pump repeating scattergun. This latest is a spitting image of another pump gun that, since 1912, has probably been the most popular in this country.

The Colt Company has decided to drop all further production plans for the Sharps single shot rifle. The firm has a new president in Bob Schultz. The handy little .38 Detective Special now has a shrouded extractor rod, which gives it a more sturdy well-turned appearance. Charter Arms, the makers of the Lilliputian pocket revolvers in calibers from .22 to .38, have a .44 Special in the works. It will be a 5-shot and built on a small, light frame.

Super-Vel, the manufacturers of the hottest line of handgun cartridges, announced just before the sports show that they will annually present a trophy to the outstanding hunting handgunner of the year. Super-Vel will put up a handsome 40-inch trophy depicting a pistolman in action. A committee consisting of 10 of the leading firearms writers will make the selection.

The MB Associates, an experimental laboratory on the West coast (they designed the miniaturized rockets several years ago) showed up at the show with a .38 Special load which was probably the most unique round on display. The cartridge contained a plastic jacket which held a "bean bag." This bean bag was about the size of a .25¢ piece and was made of exceedingly tough nylon. Within the nylon were two dozen No. 12 shot pellets. The bag was folded neatly within the plastic jacketing material, and when fired, the lands etched grooves into the plastic and caused it to break, releasing the bean bag. This bag goes down to the target with devastating force. At 30 feet, it is capable of serious injury to a human; at 150 feet it is harmless. The new round is called "Short Stop" and was developed most especially for air marshals. It will have a lot of application for all law enforcement officials.

The Rocky Mountain Arms Company had a black powder rifle which, for sheer novelty, was a real attention getter. The rifle appeared to be a conventional muzzle loader until the breech was inspected. Here there was a turn-table which comprised the firing chamber. The table could be rotated 90 degrees and then the powder and ball could be inserted. Also brought into view by this quarter-turn was the nipple for the placement of the percussion cap. When the turn-

table was rotated back to the original position, the charge was then in alignment with the bore. The rifle was displayed in .22, .36 and .44 calibers.

Roy Weatherby, ordinarily thought of as the manufacturer of the hottest line of Magnum rifles, has branched out. He now has a very appealing gas-operated 12 gauge autoloading shotgun and a pump repeater that is patently modeled after the selfstarter.

Mossberg, a firm noted this past half-century for probably giving the buyer more dollar value than any other maker of firearms, has at long last lengthened the receiver on its Model 800 bolt-action rifle to accept magnum length cartridges. The rifle will now handle the 7 mm. Magnum; next year, perhaps, it will be chambered for the .300 Winchester Magnum.

Simmons Gun Specialties, a house that has long held a virtual monopoly on the raised ventilated rib business, proudly fetched to the show a deluxe grade Remington Model 1100 autoloader with the 250,000th Simmons ribs attached to it. That's one lot of ribs, believe me!

Mauser-Bauer, the new import house with the somewhat startling new Mauser Model 66 rifle (no receiver as such and quick interchangeability of barrels) had a high quality

over/under shotgun on display. This smoothbore, intended for skeet, has a jug choke in it. But the remarkable thing about the jug was that it had been achieved by expanding the tubes at the position of the choke, giving the gun the appearance of a snake that had swallowed a hen's egg!





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WHY NOT TELL THE TRUTH U.S. MILITARY

PART 1 By E.B. MANN

WE ARE A cocky lot, we Americans. Perhaps the cockiest thing we do, and the rudest, is to call ourselves Americans. Canadians, Brazilians, Mexicans, et al, are as much Americans as we are, yet we monopolize the name of two whole continents. We don't even *have* a name of our own! Who ever said, "United Statesians?"

We're braggarts, too. In every war we've fought, we have bragged (and our news media and military moguls have told us) that our American "boys" could just naturally "whup" at least two of any other breed, and that they had better weapons, better tanks, better ships, better planes, better training, and better pin-up girls than any other soldier in the world. It was never true—any more than it is true now (as our news media and some Americans tell us) that everything we do in Southeast Asia, from

presidential policy to tactics to equipment, is bad. As usual, the truth lies somewhere in the middle ground, less gaudy than the boasts, less black than the smears, but priceless as a springboard to progress—if we will use it!

One of the reasons why American fighting forces have *not* had the best in the way of equipment is that we have not faced the truth, have not profited either from our errors or our achievements. And one of the reasons for this is that generation after generation of military planners have stood pat on the methods and weapons of past wars, rejecting advice, ignoring bloody battlefield evidence, refusing to accept any new idea unless it was American, or any new American idea unless it was "Army," or even any new Army idea unless it came from their own tight little rank-conscious "Ordnance" empire. And if you think that is harsh, let's look at the record.



A snow-covered field, somewhere in the Soviet Union, is the stage for a mass Russian military maneuver. Foot-soldiers, the backbone of any army, armored troop carriers and several Russian tanks move forward.

It's a long record; longer by far than the space we have to tell it. So let's start in the middle, with our Civil War, when Army experts rejected breech-loading rifles (much less repeaters!), clinging to the muzzle-loaders of 1812 or earlier. Berdan's Sharpshooters were one of a scant few small units armed with breech-loaders—rifles privately purchased by the men themselves or by their civilian backers. And it was the fire power of those breech-loading rifles that enabled Berdan's small company to delay Longstreet's mighty column and thus turn the tide of battle at Gettysburg. One military historian has since opined that 100,000 such rifles could have ended that war as much as two years sooner, in favor of whichever side had them!

With the understanding that references here to "Army planners," "Army experts," "Ordnance," et cetera, include all those branches of the military establishment entrusted with the research and development, selection

ABOUT MATERIEL?



A prototype of the Army's Main Battle Tank for the 1970s (MBT-70) traverses a cross-country course at Aberdeen. The author states that Germany produced the best tanks during the war and now Russia is doing so.

and procurement of military weapons and materiel, let us say that this reluctance to accept change, this rejection of civilian advice and know-how, or even military advice from non-Ordnance sources, is a pattern that has continued down the decades. The word "Ordnance" is obsolete now, of course; replaced by "the Materiel Command" and its maze of interlocking departments; but the voice is still "the voice of Esau," recognizable in the recent Materiel Command decision to oust the commercial manufacturers who have supplied the service for more than a century and restrict the production of military ammunition to establishment-owned and establishment-run plants and arsenals—a decision of which we will have more to say later.

World War II provides a multitude of deplorable proofs of that pattern, along with some opposite examples of which Ordnance and the entire nation can be justly proud. The much

(Continued on page 59)



The German 88-mm Grenade Launcher with missile was captured on the outskirts of Cisterna Di Littoria in Italy. It is the first weapon of its kind on the U.S. front near Anzio. Pictured 1944.

HELD POSITIONS FOR VARMINT SHOOTERS

By ROBERT H. REAGAN



The correct use of a good sling on a varmint rifle helps to eliminate many aiming errors.

HUNTING varmints at long range is a demanding sport. Precision rifles and telescope sights are required, but they are almost useless unless a shooter can keep his aiming error very small. The instant kill button on a crow is a circle just less than two inches in diameter while the button on a woodchuck is a rectangle with rounded corners about three by six inches. The rectangle for a fox seems to be about three by four inches if you see him broadside, while a coyote is a bigger target; set shots on coyotes usually happen from very long range. The rifles and scope sights that will shoot this well and still leave some margin for aiming error have become relatively common, but the people that can hit crows at 200 yards, woodchucks at 300, and coyotes at 400 are few and far between. Even after a man learns what the trajectory of his rifle looks like at varmint ranges and he begins to get an idea of what the wind will do to his bullets, he will find that keeping the crosshairs on his target and squeezing off a shot is a demanding sport in its own right.

The formal target shooting positions are only part of the answer for the varmint hunter. Those of us who have perfected good solid prone and sitting positions use them some while hunting, but one sees these methods of reducing aiming error less and less. Practice in these positions, as well as kneeling, will help any rifleman hit at long range. In addition, a solid grounding in the formal target positions, including one used in the British Army but not in the U.S., will train a shooter in the basic principles involved in holding a rifle steady.

A good solid prone position with a



The author demonstrates the proper sitting position, using the "buffalo sticks" described in the story. Note that his elbow is below the knee and not resting on it.

sling is a joy to any rifleman. As a Marine, this writer fired a number of 500 yard perfect scores from prone on an 8" bull's-eye with the M1 Rifles. My father taught me the formal target positions long before I joined the Corps and I learned in my first session with Dad why most people never learn to shoot the formal positions well. They hurt. Like fencing or riding, it will take considerable practice for a novice to enjoy his sport comfortably.

Put a good military sling on your rifle. Get an old target shooter or a gun salesman that seems to know what he is talking about to show you how to use it. A right handed shooter should hold the rifle by the pistol grip in his right hand, bracing the rifle butt against his hip. Roll the sling a quarter of a turn counter clockwise as viewed from the rear. Put your arm through the loop formed by the two layers of the sling and the sling keepers. Move the left hand clockwise above the sling and grasp the forend with the left hand. The sling should lie flat against the back of the left hand. If it does not, you have rolled the sling the wrong way.

Drop into prone position from a kneeling position by putting your left elbow forward and on to the ground exactly under the forend—not out to the side. Put the rifle in your shoulder and your right elbow on the ground. If sling tension does not hurt your left arm and cut into the back of your left hand, tighten the sling.

Move the sights left and right by moving your tail. Move the sights down by moving forward and up by

moving back. In all these moves, your left elbow should stay put as if it were a swivel pinned to the ground with all the moves around the swivel. Now relax in a position that will leave the sights just above the target. Tremble indicates that you are either muscling the rifle into position or the sling is not tight enough. Move around until the sights settle just above the target without tremble. Breathe in until the sights come down to the target and squeeze off your shot. A good prone position is almost as solid as a good bench position. The only problem with prone is that grass, brush, or even a roll in the ground may obscure your

target. Sitting position will put you one notch higher and kneeling another notch higher yet.

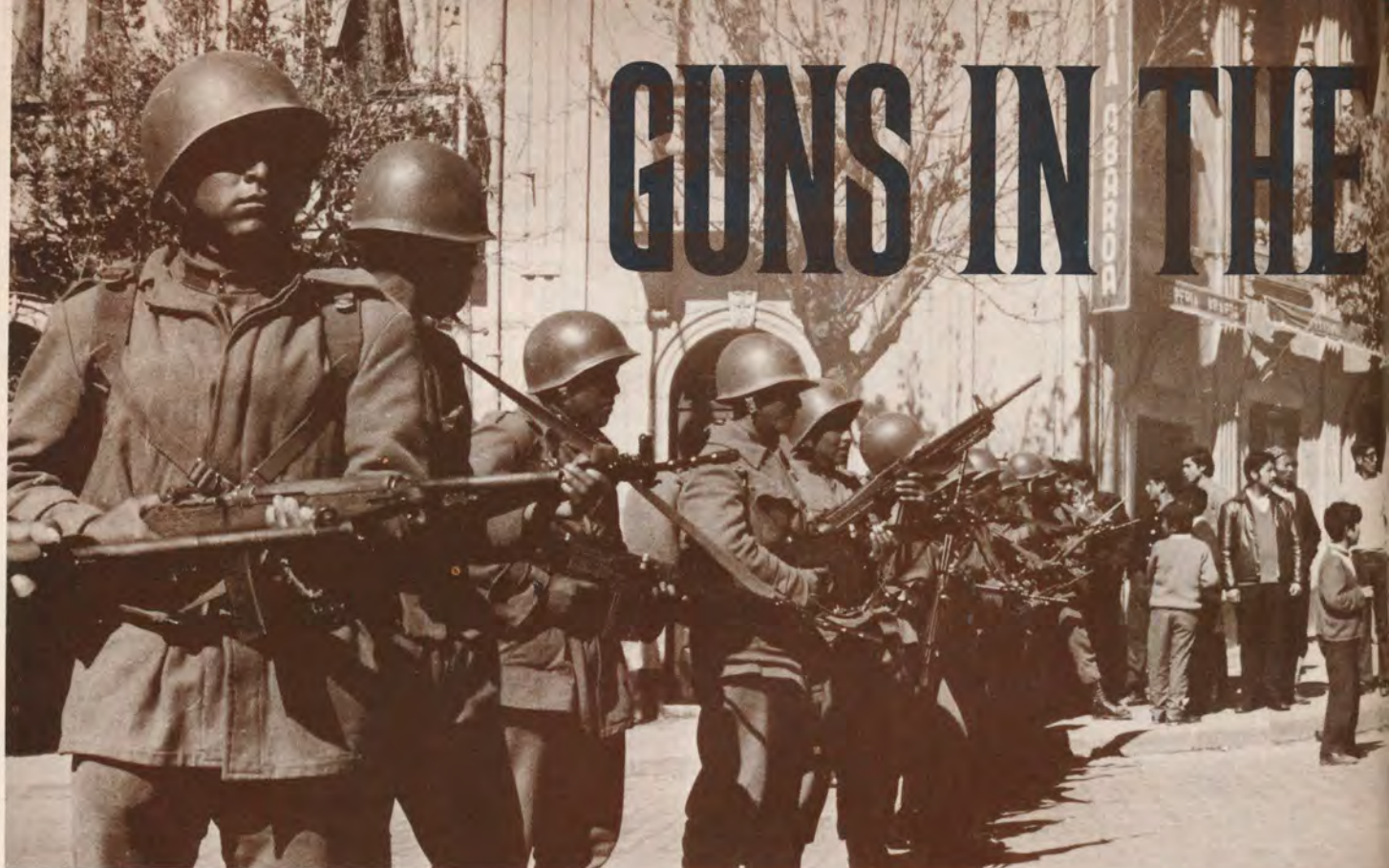
In the sitting position, sit down facing 20 degrees or so to the right of your target and with your feet roughly 18 inches apart. Using the sling to steady things up, brace your elbows on the inner sides of your legs just below the knees. Make sure your left elbow is squarely under your rifle by squeezing your knees towards each other.

Kneeling is less steady. Kneel down with the sling on facing somewhat to the right of your target, with your legs spread about *(Continued on page 69)*



While resting your rifle in the kneeling position, always use some sort of cushion to prevent any barrel vibrations which could destroy accuracy.

GUNS IN THE



UPI Photo

By LES FIELD

THE SUCCESSFUL Conservative Bolivian Revolution of August, 1971 has inevitably showed the world a cross section of the armament which has been used by that country in modern times, ranging from types current during the Chaco War of 1932-35 to the most modern. What has not been so well appreciated is that it also demonstrated the relative value (or lack of value) of the Communist-style "Workers' Militia" under circumstances when this type of force did not enjoy wide public support.

The Bolivians, who had been under strong German influence in military matters since the turn of the century, adopted a Mauser '98 system Long Rifle and Cavalry Carbine as early as 1907. These arms were chambered for the 7.65mm Cartridge, common to Bolivia, Argentina, Peru and Bolivia's Chaco War enemy, Paraguay.

The Bolivian 1907 Model Long Rifle is similar to the Argentine Long Rifle Model 1909 in most details, and therefore would appear familiar to the large number of U.S. collectors who have Argentine 1909's. Differences to be noted are the Model designation on the side of the Receiver, the Bolivian Coat-of-Arms on top of the receiver ring, and the name of the manufacturer, the Waffenfabrik Mauser, at Oberndorf a/n. The Bolivian Long Rifle undoubtedly shares the excellent accuracy characteristics common to the Argentine and Peruvian models of 7.65mm long rifles, as well as their good record of dependability and high standards of manufacture. It is well known that the Cavalry Carbine of this model was procured in quantities numbering in the thousands, but no example is known in the U.S., and all we can surmise is that it closely resembled the Argentine and Turkish pre-World War I patterns.

In the course of three years of hard combat in the Chaco, Bolivia expended a great number of rifles and soon adopted two patterns of short rifles, a CZ Brno Model and a Mauser Werke Model of 1935. Photographs of the recent Bolivian Revolution demonstrate that the CZ Brno Short Rifle is much the more common model. This rifle is almost exactly similar to the 8mm Vz-24 types still widely available in the U.S., which were used by the German and Czech Armies in the Second World War. Like the Columbian and Guatemalan 7mm Models sold in the U.S. some years ago, these rifles vary from the 8mm Vz-24 principally in the national coat-of-arms of the purchasing country on the receiver ring (in this case, Bolivia), and receiver and sights adapted to the Bolivian standard service 7.65mm cartridge and its charger clip.

Illustrations accompanying this article show just how common this high-quality Czech rifle is. Leftists supporting the Torres Government brandished it extensively, and U.S. News Service photographs show that the "Revolutionary Nationalist Militia", the armed elements of the political party supporting Victor Paz Estenssoro, one of the great Bolivian contemporary figures who had been in exile under Torres' regime, appears in the streets of La Paz with their own 7.65mm CZ Short Rifles, at the time of the return to Bolivia of their leader.

The Bolivian Army used the 7.65mm Short Rifle until recent years, and examples in the U.S. reveal that delivery of this rifle continued after World War II. Among the latest models noted is the Model 1955, very much like the prewar Models, but substituting "German Second World War" type stamped and welded bands for the more expensive (and beautifully finished) furniture common before the War.

Extensively equipped with the 7.65mm Short Rifle, the

BOLIVIAN REVOLUTION

much vaunted Bolivian "Miners' Militia" proved no match for regular troops in the fierce engagements which characterized this Revolution. The miners, under the leadership of Juan Lechin, a long-time Communist and power in the Miner's Union, had first been given Government Military arms in the '40's. By using their armed power, supplemented by improvised dynamite bombs made from the explosives ever-present and available in a mining country, the miners first assured the Nationalization of the Tin mines, one of the main sources of income for the Bolivian economy, and then held a virtual veto power over the actions of successive governments in running the mines.

American Wire Service reporters intimated (before the Revolution against Torres) *(Continued on page 72)*

UPI Photo



UPI Photo



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Above, right: World War II vintage P-51 used in the attack on San Andres on August 23rd. Above, left: A Bolivian Command Car made by Cadillac Gauge confronts the students. Left, armed students advance toward the Bolivian Army. Above, a Bolivian miner steps down as a truckload of miners arrives in La Paz, where the miners and the students were working under the leadership of Juan Lechin, the leader of the "Miners' Militia." Lechin's forces attempted to take over the Regular Army headquarters, but were quickly beaten.

THE GREAT PISTOL MATCH

June 4, 1888



CHEVALIER IRA PAINE

final choice was the "44 Russian Model" Smith & Wesson, as the New Model No. 3 was then catalogued by the company. It was with this model revolver that Mr. Paine did the greatest part of his revolver shooting for the remainder of his life. And it was with it and the Stevens pistol that he accomplished such shooting feats that in 1882 he was made a Chevalier of an ancient military order by the King of Portugal. Being a professional showman he was quick to take any advantage to be had of the title and was referred to as Chevalier Paine from that time on.

The first revolver match of note was scheduled at the annual meeting at Creedmore in 1886. The target was to be the standard American 200 yard rifle target fired at twenty-five yards and the match to be unlimited reentry of 5 shot targets with the best three counting. The winning score was 143 fired by C. E. Gillette with a 1873 Model Colt single action in 45 caliber. His best 5 shot target was a 48. Another match was scheduled at the fall meeting of the Massachusetts Rifle Association. This match drew a professional shooter, Chevalier Paine, in addition to the amateur entrants. Chevalier Paine shot 148 of a possible 150 with his closest competitor scoring a 142.

The popularity of revolver shooting grew at a very rapid rate and it was soon found that, with practice, a champion grade shooter could score "possibles" on this target at 25 yards so often as to take the challenge out of it. This led to the decision to change the distance to 50 yards. Chevalier Paine,

By ROBERT J. NEAL

THIS FAMED match for the Revolver Championship of America probably did more to bring precision revolver shooting in general, and the revolvers of Smith & Wesson in particular, before the public eye than any other single event. The conditions which led to this match are rather interesting and worthy of recounting. Although target shooting with handguns had been going on in some manner (mostly informally) since shortly after the invention of this type of firearm, match and exhibition shooting as we think of it today was relatively new in 1888. Up to this time most precision shooting of handguns had been done with single shot pistols. The revolver was not thought to be capable of nearly

the accuracy of the pistol. The sport had grown sufficiently popular to inspire many amateurs and a few professionals.

Among the best of the professionals was Ira Anson Paine. By about 1880 he had acquired considerable skill and reputation as a exhibition shooter in this country and Europe. In 1881 he toured Europe giving exhibitions with the Stevens single shot as his primary arm. The story is told that while on this tour he decided to add revolver shooting to his agenda and consulted with the equally famed Gastine Renette of Paris, builder of fine gallery and dueling pistols and owner of perhaps the finest and best known shooting gallery in France. Together they were trying to find the revolver best suited to target shooting in all respects and supposedly tested in depth about all makes available for such work. The



F. E. BENNETT

on October 15, 1886, fired 100 shots at this new distance at the Walnut Hill range. He did so by firing ten 10 shot targets with a high single target of 84 and a total score of 791. This newly created 100 shot record provided a challenge to the revolver shooters which did not go untried. Before it could be broken by another, Chevalier Paine broke it himself on March 17, 1887, by shooting a total score of 841 with the high single target being 90. As can be seen, Chevalier Ira Paine had fairly well dominated the revolver shooting up to this time. Some of the better amateurs exceeded his October 15 rec-

ord on April 25, 1887, by firing 837, 827, and 801 as first, second, and third positions in a match on that date. This was not until after Paine had raised his old score to 841, however.

Rapidly rising in the ranks of revolver shooters were the Bennett brothers, W. W. Bennett and F. E. Bennett. Both had been primarily pistol shooters and had only recently taken up the revolver in the wake of its growing popularity. Both were professionals and both appeared to be aiming at Chevalier Paines almost unchallenged records. On May 21, 1887, W. W. Bennett broke the ten shot record by raising it from 90 to 91. He too used a New Model No. 3 Smith & Wesson revolver. On November 4, 1887, F. E. Bennett, again using a New Model No. 3 revolver, broke Chevalier Paines 100 shot record by raising it to 857. At the same time he equaled the Chevaliers' best 10 shot score of 90. It seems that for the first time the Chevalier had met his match

with the revolver. He had met it not once but twice; and in the meeting had lost the two records in revolver shooting that a short time before had felt so secure in his hands.

Ten days later F. E. Bennett added further insult by raising the 100 shot record by another 20 points to 877 and at the same time raising the 10 shot record from 91 (held by W. W. Bennett) to 92. On November 25 he fired another 100 shot match but did not raise the 100 shot score. He did however raise the 10 shot record to 95.

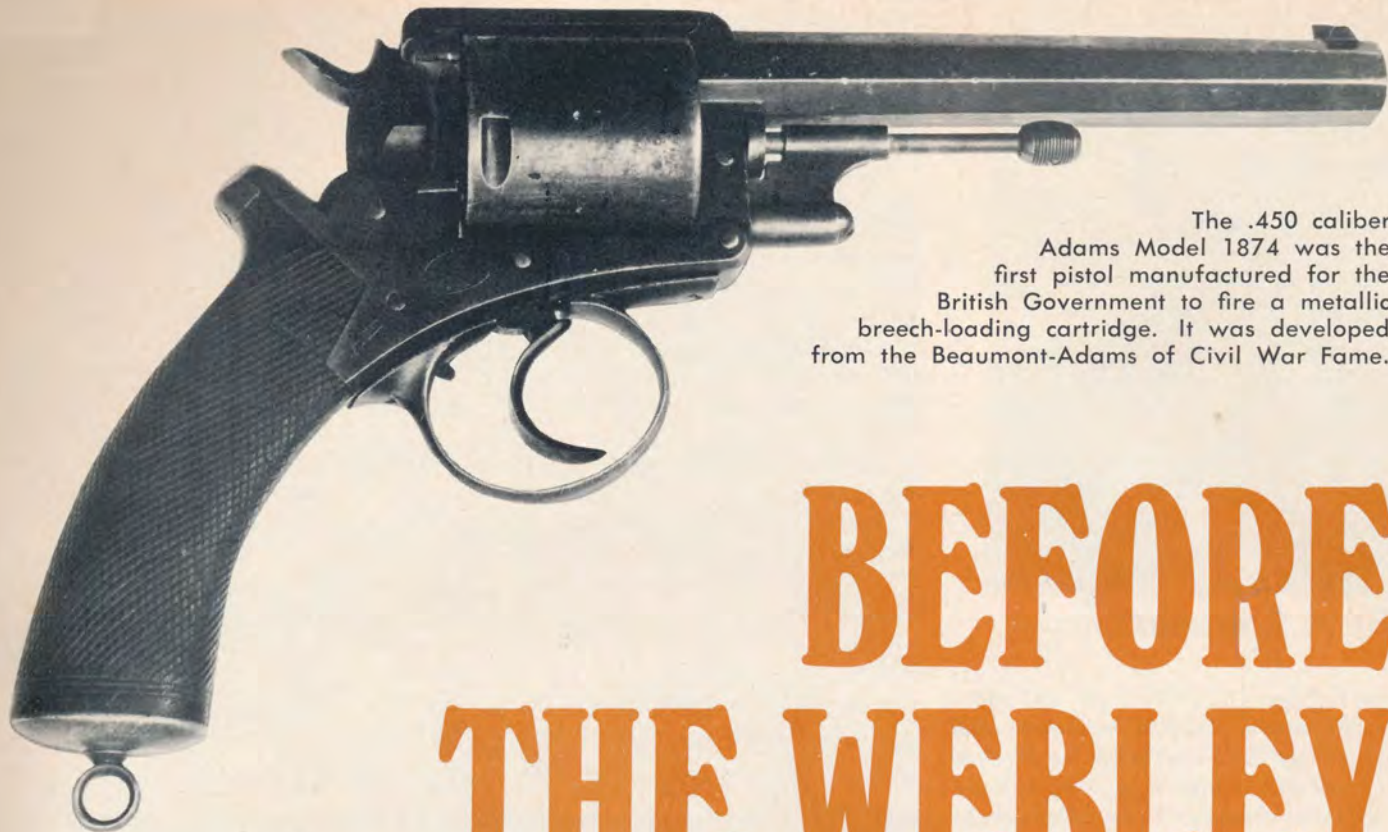
There seems to be no doubt that the Bennett brothers (F. E. Bennett in particular) were aiming at Chevalier Paines revolver shooting in a big way. In November of 1887, a wager was made (by whom we do not know) that F. E. Bennett could equal or exceed 841 (Chevalier Paines old record) on six consecutive days of firing 100 shot matches. He fired these matches on December 5, *(Continued on page 64)*



S & W New Model No. 3 Target pistol with scarce "spur"-type trigger guard.



Called the "44 Russian Model", the S & W Model No. 3 was the favorite.



The .450 caliber Adams Model 1874 was the first pistol manufactured for the British Government to fire a metallic breech-loading cartridge. It was developed from the Beaumont-Adams of Civil War Fame.

BEFORE THE WEBLEY

EVERYONE knows the Webley as the revolver of the British Army. Those who get to know the weapon better learn that there are six "Marks" which run from 1889 to 1928. The more inquisitive may then ask what came after, and perhaps what came before.

In the middle of the last century, all modern armies had adopted percussion (cap and ball) firearms, and the revolver was becoming established as the most efficient handgun. During the Civil War, Americans used Colt and English Adams revolvers, and the same models of these weapons were used by British forces in the Crimean War (1854-56) against the Russians. The development of the metal cartridge in the 1860's resulted in the conversion of all sorts of percussion weapons.

One of the best was the British Government conversion of the Deane & Adams double action percussion revolver. This weapon was a considerable advancement over the Colt Navy and Dragoon models even before its conversion to the metallic revolver. This weapon was a considerable advance-

ment over the Colt Navy and Dragoon models even before its conversion to the metallic cartridge. It was strong, reliable, and well finished, and most important, it was a double-action with a solid frame, and in a heavy caliber. (Colt did not offer a double action until 1873, whereas the Dean & Adams double action Beaumont Model went into production in 1857.) The Adams weapon was a favorite of Confederate officers, and fired a 54 bore (.45 caliber) ball. It is not surprising then that the Adams became the first metal cartridge revolver to become British Army issue. The first weapons of this kind were converted Beaumont-Adams percussion types around 1867-69. The success of these conversions led to a Government contract for the Model 1874, which was designed outright as a metal cartridge center-fire revolver.

The .450 Adams round, though it compares badly with later big bore rounds, was a great advancement over percussion loads, if only for the high rate of fire provided by the system. The Adams bullet would penetrate three half-inch wet elm boards spaced

half-inch apart at 15 yards, and would shoot a 12 inch group at 50 yards. The round-nose bullet weighed 225 grains and left the muzzle at a velocity of 650 feet per second on black powder. To modern eyes, the unique feature of this cartridge is its case, which had a separate rim at first made of iron, that was riveted to the case by the primer cup. This type of rim was similar to that used in the cartridge for the famous .45 Martini rifle.

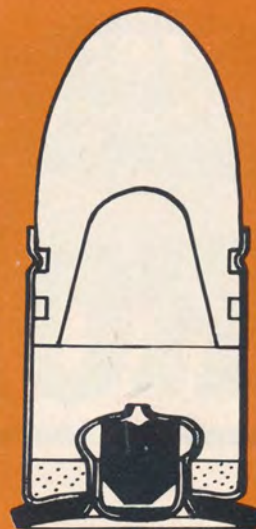
The cylinder of the 1874 Adams looks quite long compared with the cartridge: actually it is the same length as that of the preceding percussion type. Later, Webley revolvers chambered for the .450 Adams round often had cylinders under 1 1/4 inches in length. The length of the cylinder on the Adams illustrated is 2 1/8 inches. This extra length came in handy later when the .450 Adams round was superseded by the more powerful .476 Enfield cartridge. Late Adams revolvers were either converted to .476 or made that way from scratch, in anticipation of the new round.

The 1874 Adams was a handsome

weapon with a long, comfortable grip rather on the narrow side. A pronounced spur on the top of the grip steadied the pistol during pulloff and recoil. A hinged loading gate was on the right; (the cylinder did not swing out). To extract the spent cases, one pulled out the rod nested inside the cylinder axle, and swung it to the right to line it up with the chamber opposite the loading gate. The cylinder was then rotated by hand while the cases were punched out the loading gate. This method was slow, but not as slow as the drill necessary with contemporary weapons that requires removal of the cylinder for unloading! This patented Adams ejector was later used on various Webley police pistols until 1914, and has been widely imitated by other manufacturers. The 1874 Adams was issued in time to see service in the Zulu Wars and at Khartoum in the ill-fated attempt to relieve General Gordon in 1885, and some of them remained in service (Continued on page 72)



The Enfield .476 cartridge used a solid brass case. The hollow-based bullet contained a clay expansion plug.



Adams Mark I .450 had an iron washer rim riveted to the case by the primer cup. The wad in base strengthened the thin case.



The Enfield .476 revolvers took the place of the Adams in the British forces between 1880 and 1887. Its rapid ejection system differs greatly from that of the earlier Smith & Wesson. The top-break, hinged-frame weapon was made to fire the new .476 round.





**TEST
REPORT**

NAVY ARMS

ROLLING BLOCK



THE AUTHOR FOUND THAT THE NAVY ARMS ROLLING-BLOCK RIFLE IS QUITE SUITABLE FOR OFF-HAND SHOOTING. DESPITE ITS WEIGHT, ONCE ON TARGET, THIS RIFLE SETTLES TO ITS SIGHTS IN A DISTINCTIVE MANNER UNMATCHED BY FEATHERWEIGHTS.



Navy Arms also offers their Rolling-Block with a half-octagon barrel, which reduces weight and improves balance for a fine hunting arm.

RIFLE

By KEN WATERS

WHEN OUR editor asked me to run tests on the new Navy Arms Rolling-Block single shot rifle, the idea appealed to me at once. For a third of a century now, I have been having "affairs" with single shot rifles, culminating some years back in a co-authorship with Major Ned Roberts of a book which we called, "The Breech-Loading Single Shot Match Rifle."

As Ned once said (in referring to a Pacific Ballard), those fine old single shots "looked like honest-to-God rifles". They shot like that too, turning in some fine scores at ranges up to and including 220 yards (40 rods) with their meticulously cast, patched and loaded cast bullets driven by charges of black- semi-smokeless or duplex powder loads.

I think the reason I have always held such a high regard for single shot cartridge rifles is that perhaps better than any other type of firearm, they combine a high level of accuracy with a traditional "old rifle" appearance, and match the nostalgic appeal of earlier historic associations with the convenience and practical shootability of modern cartridge arms.

The only trouble with them was that there just weren't enough made to go around amongst all of today's shooters and collectors who would like to own one. Competition to acquire those fine old rifles has driven prices to downright ridiculous heights, and where we once witnessed specimen pieces being torn apart for actions around which to build varmint rifles, recent years have seen increasing numbers of them being lovingly restored to at least resemble their original pristine beauty.

On second thought though, they *did* present another problem where modern shooters are concerned. While many of them took to smokeless powder without a murmur of protest, others proved to have actions too weak for healthy—or should I say, *unhealthy*—loads of the higher pressured propellants. In general however, those old soft steel barrels turned out to be an even bigger problem than the actions.

Strong receivers such as those on Winchester High-Wall, Sharps-Borchardt and Remington-Hepburn rifles could take surprising strains, but their barrels had rifling that was too soft to withstand the heat and erosion of heavy smoke-

less loads with modern jacketed bullets. And, in quite a few models, rifling that was too shallow for cast *lubricated* bullets as well.

The need for replica rifles fabricated of modern high-tensile steels to meet growing shooter demands was apparent. If faithfully executed, a replica could readily recapture the charm of the old originals while having a stronger action, and most especially, a barrel that would stand up under the rigors of high temperature smokeless powders and jacketed bullets.

To provide riflemen with this sort of a shooting replica was the motivation which prompted Val Forgett of The Navy Arms Company, Ridgefield, New Jersey, to arrange for the manufacture in Italy of a reproduction of the old Remington-Rider "Rolling-Block" breech-loading single-shot rifle in .45-70 Government caliber.

For some months now, I've been test-firing one of these Navy Arms Rolling-Blocks from the bench at a hundred yards with a broadly representative selection of loads, both factory and handloads, in just about all bullet weights from 300- to 435-grains, cast lead alloy as well as jacketed soft points. In doing so, I've not only come to know this rifle and its capabilities; I've also learned a lot about reloading the .45-70 cartridge.

Let's have one thing understood right from the beginning. This is a *shooting* rifle. Treat it as a collector's item or show piece if you will, but essentially it was made to be fired. Both the barrel and receiver of this rifle were fabricated with the knowledge that a goodly percentage of shooters will be using jacketed bullets and smokeless powder which, indeed, is the only kind of factory .45-70 load available these days.

One of the key tests which we made on this Navy Arms single-shot consisted of firing gradually increasing charges of a basic powder—IMR-3031 was selected because of its medium burning rate—in an attempt to determine the upper safe load limits of this action. This was done by firing two rounds of each load, utilizing our heaviest (435-grain) cast bullets, starting with 35-grains #3031 and working up a grain at a time, with careful micrometer measurements of fired cases taken and recorded following



One of the better targets fired with the Navy Arms Rolling-Block rifle. This 1½ inch group at 100 yards was made with handloads comprising 350-grain Herters round-nosed soft point bullets and 56-grains H-4831, with CCI #250 Magnum primers. The cases used were the modern solid-head Winchester-Westerns, composed of a fine, strong brass. The Winchester-Western ammo was the most accurate factory round tested.

each shot, plus a visual inspection of all fired primers.

Although I can't quote pressures on the basis of this system, I have been able to make meaningful comparisons of fired cases. Case head measurements remained comparatively constant until a charge of 42-grains #3031 was reached, after which there was some minor fluctuations of individual cases, but with an upward trend until what I consider to be maximum allowable expansion (for this rifle) was reached at 47-grains #3031. At this point .0015" of additional expansion (that is, over and beyond that recorded following original firings with factory cartridges) was noted, further than which I personally don't care to go.

Based upon this criteria then, I would judge that the Navy Arms Rolling-Block is considerably stronger than the old Trap-Door .45-70 Springfield, probably not quite up to handling loads listed as maximum for the Model 1886 Winchester, and—as expected—definitely *not* in the same strength class as the Ruger No. 1 or Winchester High Wall single shots.

Of course this test only covered a single specimen of the Navy Arms Rolling-Block, hence should not be considered as truly definitive. However, as a result of our trials, which included the use of faster as well as slower-burning powders, I would peg this rifle generally at about 5-10 per cent below 1886 Winchester maximums.

Having determined this much, I can utilize data from the Lyman Handbook tables of loads for the .45-70 Winchester Model 1886 by reducing them approximately 8 per cent—with a couple of important exceptions which I'll point out further along when discussing powders. If this is compared

to the 15-22 per cent reduction required for Trap-Door Springfields, it will be seen that the Navy Arms Rolling-Block is comparatively strong when judged by old single-shot rifle standards.

But before we get into an analysis of loads and shooting qualities, let's take a good long look at the rifle itself. In doing so, I shall assume that criticism—so long as it is constructive—is fair, even for a genuinely good and honestly made product. I like to think of it as a gun scribe's way of saying, "Although this firearm has passed its most vital tests of strength, accuracy and reliability, there *are* ways in which it could be altered to make it still better—more functional and even more attractive—in many instances without increasing costs of production".

Our test rifle has a No. 4 full-octagon barrel 24" long without taper. Thus, although a shade under 41-inches in overall length, it weighs a solid 10¾ pounds, so that a first impression is apt to be one of awe at its chunky massiveness. Hefting this piece tells you at once that recoil won't be any problem, and it isn't. That great barrel is enough to tame any .45-70 load, factory or custom!

I found it interesting to compare the Navy Arms Rolling-Block with a pair of original Remington R-B's in my collection, plus a Sharps and Winchester High Wall. Most noticeable difference is in the barrel lengths. Original Remington No. 1 Sporting Rifles generally had longer barrels; the "Buffalo Rifle" introduced in 1872 had 30" octagon or round barrels, and their "Black Hills Rifle" of 1877 in .45-70 caliber was fitted with a 28" round barrel.

In case you're wondering (Continued on page 56)

SHOOTING CLOTHES AROUND THE WORLD

By Col. CHARLES ASKINS

DURING the 1960 Olympic Games, the Soviet riflemen walked onto the range attired in leather great coats. These were immensely long, of heavy cowhide, and had a vast series of straps across the front. These fasteners were not coupled with the ordinary buckle but had an arrangement so that the more the wearer pulled on the tab the tighter the coat was pulled together. It was noted by the slightly popeyed American contingent—who were in lightest summer cotton shooting garments—that the Russians had complete freedom for arm movements even though they seemed to be laced into a corset so far as the fit of the so-called shooting coats about the body was concerned. Sweat poured from many a Muscovite brow throughout the matches but never once did a gunner deign to loosen his cowhide.

On their feet the Soviets wore ski boots. "Each boot weighed not less than three pounds", said an American coach. "Our own people wore sneakers and some even had mocassins so they could feel the ground beneath their feet", he explained.

During extensive debriefings on the Olympic Matches at Fort Benning, a good deal of comment was generated by the peculiar shooting clothing of the victorious USSR team. "Maybe we'd better have a half-dozen of those coats made up and see what gives," said Robin Montgomery, chief of the marksmanship training unit. As soon as our people got home they went to the 10-X Manufacturing Company and asked for an all-leather shooting coat. It was discovered that the heavy leather coat, when tightly fitted by the use of the multiple leather ties, did indeed act as a corset. It supported the body, dampened spinal, hip, and shoulder movement, and was a distinct aid in offhand and kneeling shooting. Since then the American team has worn the Russ-inspired coat. As for the gigantic ski shoes, these are somewhat problematical as to their goodness. Some riflemen find they are a boon, others are not so enthusiastic. The heavy soles and the weight, together with a height which permits them to be laced tightly about the ankles may tend to steady the gunner in some degree.



The now famous Russian shooting coat, first seen at the 1960 Olympic Games. It is corset-like when pulled tightly and is a terrific offhand shooting aid.



The Artic parka is needed for the extreme cold (it isn't unusual to hunt when the mercury drops to minus 35 degrees), but it is cumbersome and all movements are slow and awkward.

They say clothes makes the man and while maybe this one is open to question, it is true that clothes go a long way toward improving the lot of the shooting sportsman. There are many times and places where the judicious selection of the hunting garments make or break the gunning outing. A duck hunter over-bundled in layers of mackinaw and rain parka cannot swing and lead freely and will consistently miss. A would-be still hunter, intent on the wily whitetail, will signal his passage if he insists on leather jacket and canvas pants, both noisy in the extreme in heavy woods cover.

Hunting clothing, that is the engineered kind that is so common today and is taken for granted, is a comparatively new thing. We have made more strides in the development of outdoor apparel for the shooting sportsman since the end of WW II than was made all the century before. There was a time when there was no such thing as a hunting coat. All you need do is to study old photos of our market hunters and sportsmen of the golden era of hunting—that halcyon period from 1870 to 1900—to appreciate that shooting clothing was nonexistent.

The first hunting coats were made for wildfowlers. These were put together of tentage—a kind of canvas intended to turn rain, snow and sleet—heavy and unwieldy, it was badly tailored so that the gunner had to fight tightness and

binding in arms and shoulders when he swung after a whistling canvasback. These same coats during the autumnal interlude when quail and grouse was in season that were hot, bulky and abominably weighty.

Shell vests came next and these were a boon to the uplands gunner who no sooner got a vest which was festooned with cartridge loops across the front but shortly he demanded that a blood-proof pocket must be added to the backside of the vest so he could transport those birds brought to bag. The vest, since its inception, has been one of the most popular garments for the shooting outdoorsman. It has been adapted to the skeet field and there skeletonized so that all it offers is a shoulder pad to soak up some of the recoil and pockets to provide the shells for a round of skeet or trap.

The huntsman has always been confronted with the problem of a choice of clothing which will keep him warm and comfortable and yet not bind nor hamper his quick movements. Shooting many times, and not necessarily confined to the shotgunner, is a matter of hasty gun pointing. If the marksman is poured into woolen shirt, sweater, vest and coat, a layered assortment many times needful on a deer stand in near-zero temperatures his rifle handling is apt to be slow and awkward. The happy design of a fine assortment of new hunting duds has gone a long way to

dispel these shortcomings. However, it sometimes happens that current styles in men's clothing overlaps into the hunting clothing field and then trouble arises. Last year, in Africa, I wore a pair of fancy—and the latest—hunting trousers. These were half-cotton, half-synthetic, which was alright, but the cut was decidedly Ivy League. The legs fit so tightly there was a constant binding at the knee. In walking after elephant and buffalo you can count on a good many miles, and the cut of the trousers has got to be full and generous. I used to hunt with a Montanan who wore, around town, size 32 trousers. In the woods he wore pants that ran from 34 to 36 and held them up with a pair of huge suspenders. He was looking for freedom of action and while maybe those sloppy breeches looked like hell they sure made for hiking comfort!

The hunting world will be forever grateful to Eddie Bauer who was the first to perceive the goodness of goose down. Eddie, a Seattle outdoor clothing manufacturer, stuffed the luxurious goose feathers into coats, vests, parkas, pants, underwear and caps. The wearer gets more warmth with less weight than anything he can wear. Of course the down has too much bulk but you can't have everything! For hunting wear from the deep Arctic to the relatively balmy quail weather of the deep South, the Bauer outfit has a garment for every locale. The discovery of goose

down as a clothing mainstay is unquestionably the greatest step forward in the development of the outdoorsman's wearing apparel since buckskin.

Footgear has improved noticeably. The shoe and boot designers have listened to mountain climbers, skiers, hikers and the hunters themselves and the resulting boot is a markedly improved item over the hunting number of pre-World-War-2 days. I well remember during the late 1930s that the well dressed shooting sport turned out in a pair of riding breeches, choke-bored, and tightly laced about the calf; over these he pulled on a pair of 16-inch laced boots that were snugged-up with long laces and maybe had two buckles at the top. In this rig, an outfit which chafed and bound the calf and ankle and badly restricted the easy movement of the knee, the huntsman was supposed to climb after sheep, stalk grizzlies and gun for New England grouse.

The predominant boot today has a six inch or eight inch top, a toe with a moccasin design, a low heel and Vibram sole. Wearers have learned that this type is comfortable to any degree. Especially if they are worn with one or two pairs of heavy woolen socks. L. L. Bean, the Maine outfitter, has a most worthwhile variation to this boot. His footgear has a rubber bottom and a leather top, may go as high as 12 inches, and not only is completely comfortable in the dry uplands but is (Continued on page 67)

The shooting coat has evolved into the shooting vest, festooned with cartridge loops on the front.



HOW STRONG IS THE

By H. V. STENT

REPEATED tests have proved that modern bolt action rifles possess an ample surplus of strength and safety for the cartridges they shoot. How about lever guns?

If these were chambered only for comparatively low powered cartridges like the ubiquitous .30-30, there'd be little cause to wonder. But available in lever actions now are items like the .243, .284, and .308 which are pretty hot stuff. The .444 Marlin, too, is a very powerful cartridge. Have rifles developed back in the 1890's enough margin of strength to be really safe with such loads?

Well, if they haven't, we'll be forced to write off the bolt actions too, for Peter Paul Mauser produced the basic design for almost all of them back in that same hoary decade. To be sure, today's bolt actions boast of modifications and better steels; but then, so do current versions of the levers.

None of them lacks for locking lugs. The Winchester 88, a completely new design, has front lugs like a bolt, three of them, with 30 per cent more locking area than a Model 70. Indeed, it and the still newer Browning are so much like a bolt action in their locking that they can be left out of further argument.

Let's look at older levers. Savage's 99 has a massive breech bolt which slides up to lock against the top of the

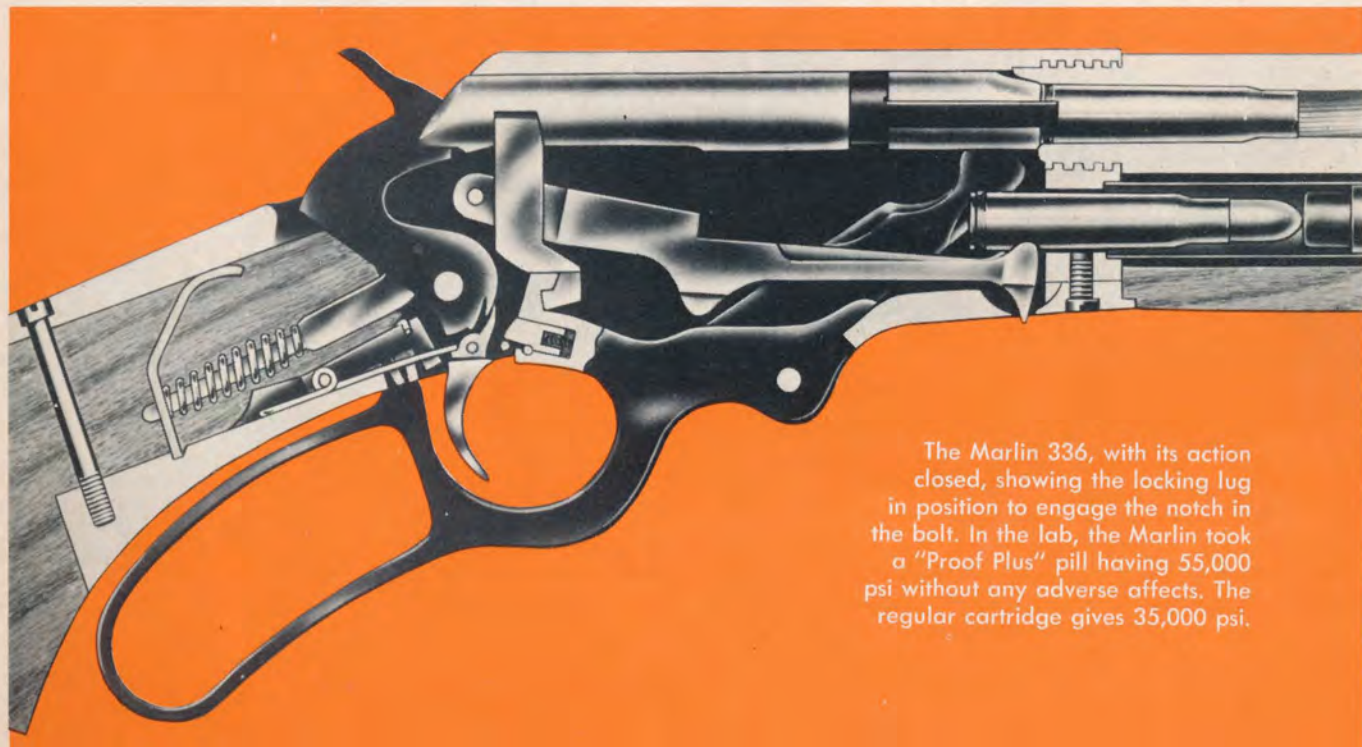
heavy steel receiver; it's a very solid job and like the 88, has considerably more locking area than many bolt actions. Winchester's 94 and Marlin's 336 have locking-lugs which slide vertically in grooves in the steel breeches. The former



locks behind the breech bolt, the latter into a deep notch in its underside, and each has at least as much locking area as my 1917 Enfield, a bolt action noted for its strength.

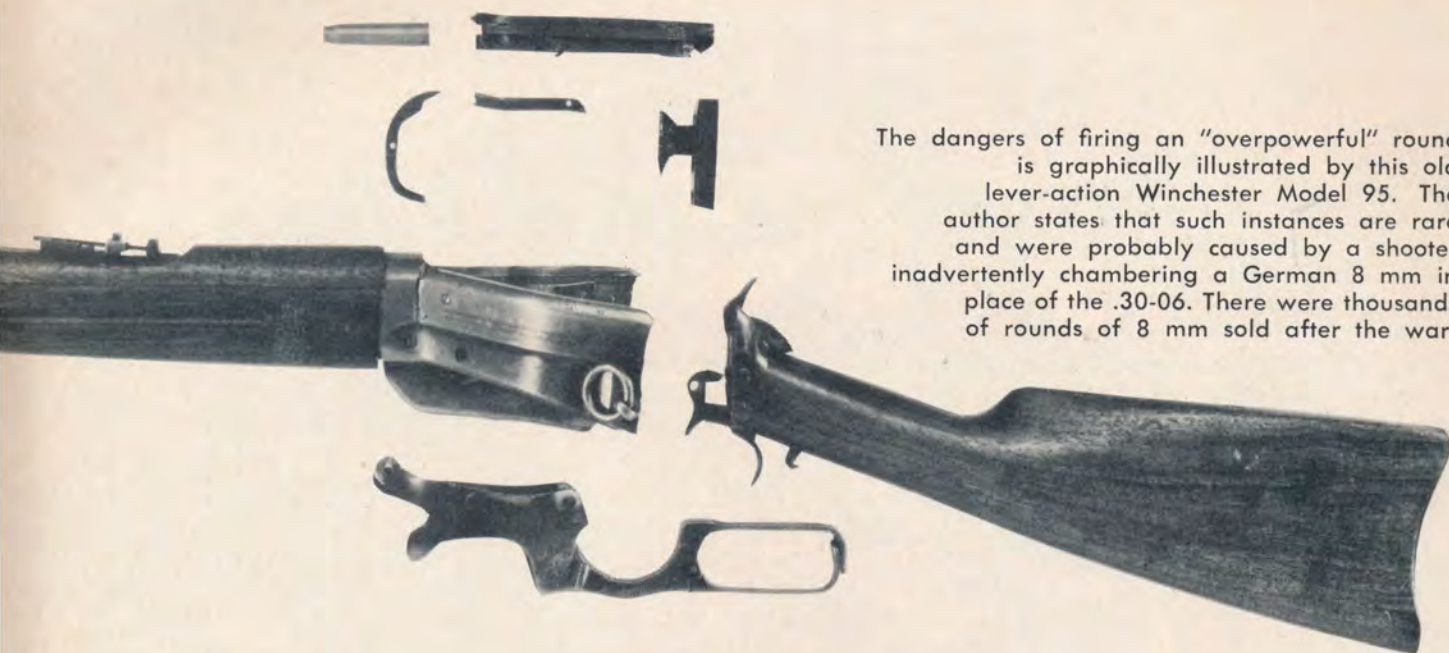
Spare a glance, too, for the proof marks on any lever rifle; they testify that it has passed pretty stiff safety tests. Indeed, it was for their lever rifles that Winchester first advertised their now-famous 'W-P', the Winchester proof mark signifying that the action and barrel so stamped have withstood firing a cartridge giving 25 per cent to 40 per cent more pressure than standard.

Inquiries as this article was being prepared disclosed that the big three lever action rifle manufacturers—Marlin,



The Marlin 336, with its action closed, showing the locking lug in position to engage the notch in the bolt. In the lab, the Marlin took a "Proof Plus" pill having 55,000 psi without any adverse affects. The regular cartridge gives 35,000 psi.

LEVER ACTION?



The dangers of firing an "overpowerful" round is graphically illustrated by this old lever-action Winchester Model 95. The author states that such instances are rare and were probably caused by a shooter inadvertently chambering a German 8 mm in place of the .30-06. There were thousands of rounds of 8 mm sold after the war.

Savage and Winchester—all test their products in similar strenuous fashion. This means that any rifle chambered for a cartridge with a regular working pressure of 50,000 pounds per square inch must show no signs of strain after firing a proof load having a pressure of at least 62,500 pounds. Sounds like margin enough, doesn't it?

But that's just a beginning. Some six years ago the H. P. White Laboratories, famous as unbiased consulting experts for ballistic problems, put a Savage 99 in .308 caliber through their wringers. After firing one standard load, pressure 52,000 psi, and one regular proof load, pressure in the 70,000 psi range, they went on to a "Proof Plus 15%" load that developed over 80,000 psi!

What happened? Enlarged primer pocket in the proof cartridge, that's all. In the same series of tests several bolt action .30-06's had to be opened with a mallet after a "Proof Plus 15%" load, and .30-06 pressures are less than a .308's. Also in this series of tests, reported in GUNS magazine, a Marlin 336 in .35 Remington caliber, whose regular cartridge gives a pressure of around 35,000 psi, swallowed of proof load of some 48,000 psi and a "Proof Plus" pill giving 55,000 psi without a hiccup. Didn't even swell its primer pocket!

Also in this series of tests, reported in GUNS magazine, a Marlin 336 in .35 Remington caliber, whose regular cartridge gives a pressure of around 35,000 psi, swallowed a proof load of some 48,000 psi and a "Proof Plus" pill giving 55,000 psi without a hiccup. These extra-hot rounds

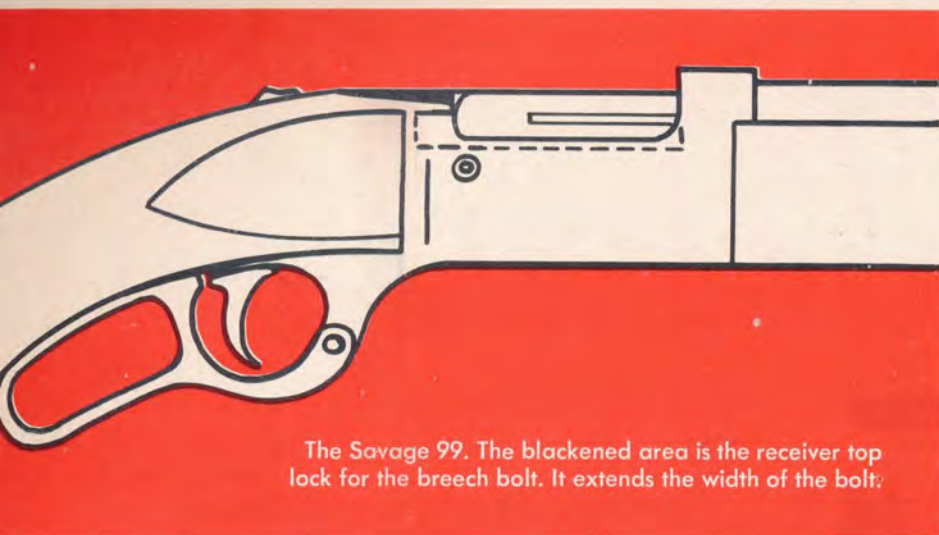
didn't even swell its primer pocket!

So it looks like there's no need to worry about the safety margin of the Savage 99 in any of its calibers, nor the Marlin either. Sure, it's chambered for the .444, but the pressure of that imposing load is less than you might expect; only about 44,000 psi. No Winchester 94 was included in the tests mentioned, but it will be dealt with later.

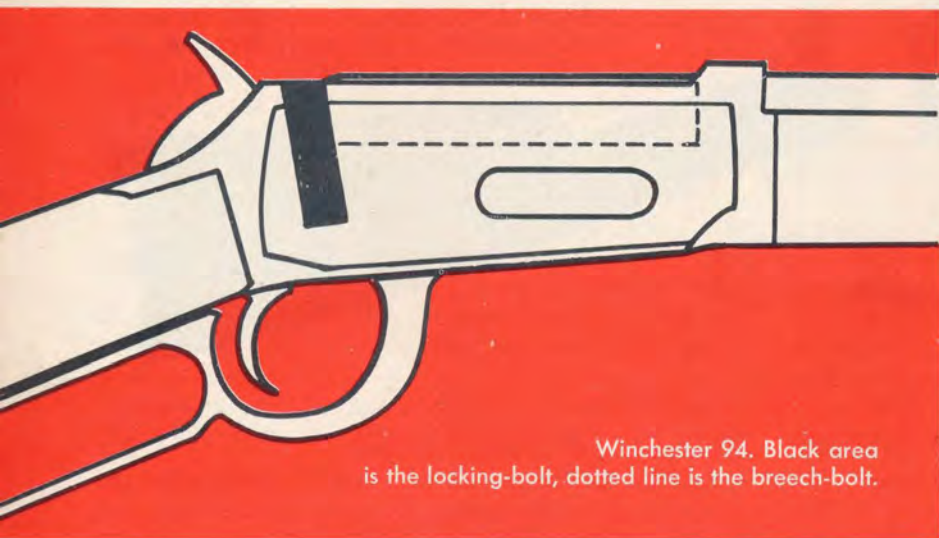
If lever actions are so strong, whence come the suspicions of some shooters that they are as collapsible as cream puffs? From two sources, probably.

First, back in the 1920s and '30s, there was a strong campaign to discredit the then-popular lever actions in order to boost the image of the bolt, at that time little used by sportsmen. Some prominent gun writers of those days went so far as to label lever guns "inaccurate," "unreliable," and "unsafe," and repeated these smears so often that many readers believed them.

Today the "unreliable" accusation looks pretty sick in view of their lever actions' continuing popularity; no gun not reliable could have lasted 77 years and sold over three million copies as the Model 94 Winchester has done, and business is booming for Savage and Marlin, too. Today's fairer-minded gun experts have pretty well voided the "inaccuracy" charge by giving a true picture of how well the lever rifles really shoot. Recently one reported testing a Model 94 and a Model 70 side by side and finding the little lever carbine more accurate than the bolt.



The Savage 99. The blackened area is the receiver top lock for the breech bolt. It extends the width of the bolt.



Winchester 94. Black area is the locking-bolt, dotted line is the breech-bolt.

A whiff of the 'unsafe' charge still seems to linger in the air. The only basis I can find for it is that an odd one of the old box-magazine, lever-action Winchester Model 95's in .30-06 caliber did blow up in the years just after World War I. There were lots of 8 mm souvenir rounds for the German Mauser lying around then, and in the only case I've known investigated, one of these was found to have been inadvertently fired in mistake for a .30-06. It's easy to do, for the cartridges have the same head size and are similar in shape. I've chambered one myself in a .30-06, but fortunately never fired it. "Fortunately," because although the 8 mm case is smaller than the .30-06, its bullet is so much bigger—.323 of an inch in diameter—that the back pressure resulting from firing it in a .308 barrel

must soar into the stratosphere. Probably the numerous blow-ups of Army Springfields at the same time, which got a lot less publicity, often had the same cause.

How strong the Model 95 actually was, I do not know. Some shooters insisted it was too weak for the .30-06 cartridge, claiming trouble with certain strong factory loads in it. Others have worn out a barrel with assorted .30-06 factory fodder and found the action still good, even when the shooting had been done in African heat. Back in 1898, when the U.S. Army was choosing a new rifle in .30-40 calibre to replace its ancient .45-70 single-shot, the Model 95 was one of the weapons tested. Test 9 was firing *three* proof cartridges each giving a powder pressure of 75,000 psi. The official report

on the lever rifle said that "the arm withstood these tests very satisfactorily."

In view of which I'm inclined to wonder if any Model 95 in good shape really could have been bothered much by the 50,000 psi pressures of the .30-06. Nor could the Krag, subjected to the same tests and final choice of the judges, have been as weak as it is sometimes made out. Incidentally, that 75,000 psi load was stronger than the famous "blue pill" used later to proof-test the .30-06 Springfields. It gave only 70,000 psi.

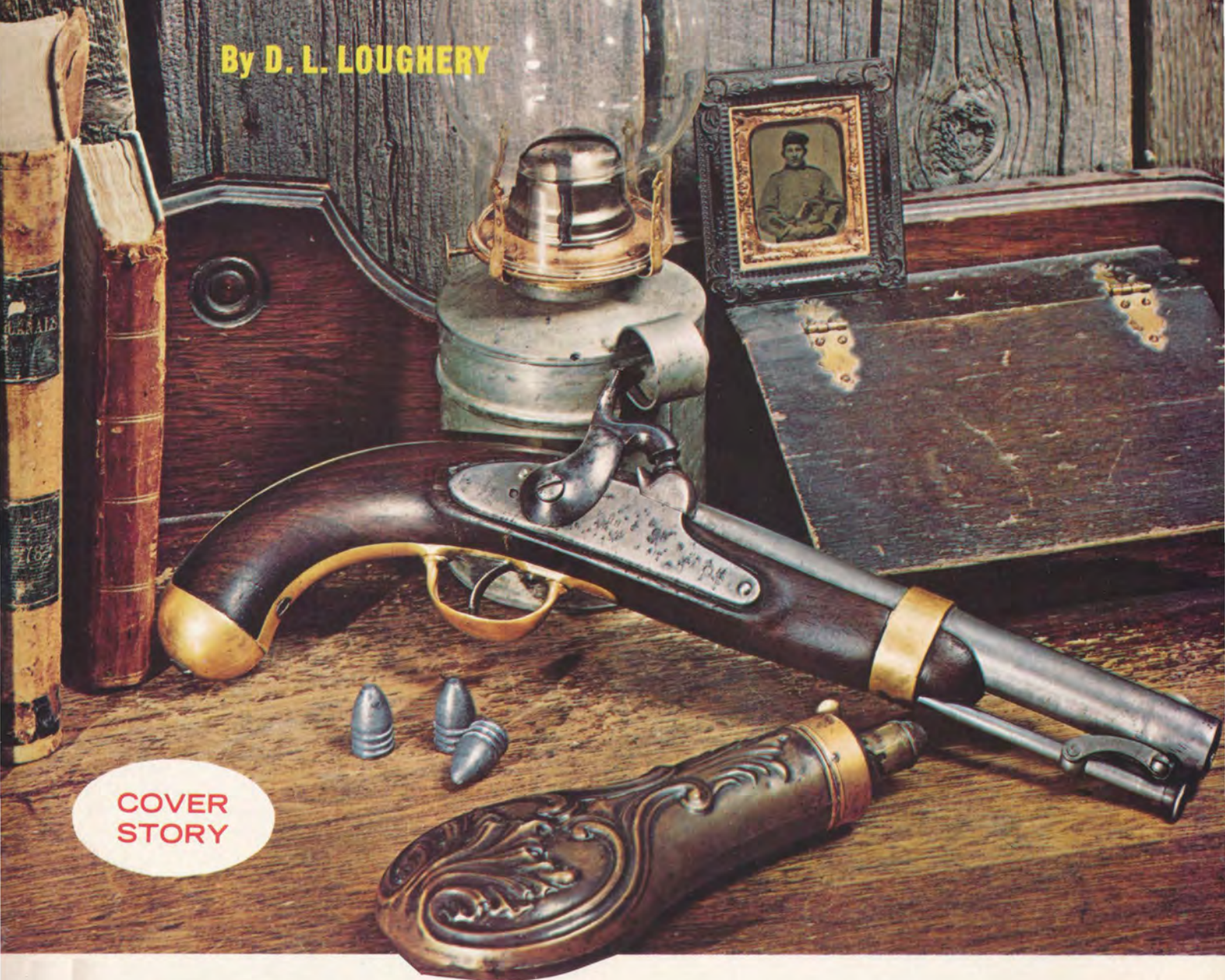
The second reason for lingering doubts about lever action strength may be a different kind of misunderstanding. Locked-at-the-rear lever actions have a bit more spring and "give" to them than front-locked bolts. This allows the cartridge cases to swell more when fired than they can in bolt guns. Doesn't mean a thing to ordinary shooters, but the handloader finds that lever-fired cartridge cases generally need more re-sizing in order to chamber easily again. And if said handloaders goes too far above standard pressures in his handloads, the cases may expand enough on firing to make extraction more difficult. Even a momentary stickiness during extraction can be exasperating to a hunter; hence reloading manuals frequently warn against the use of maximum loads in lever guns, and readers may jump to the conclusion that they are unsafe.

They aren't. The proof tests mentioned above show that. Sticky extraction is just their warning that loads are getting too warm, and for the levers to give this warning earlier than the bolts could be more a plus than a minus from a safety standpoint. Also, the sticking point varies with the condition of the individual rifle, which could be another plus. I've had a worn, headspaced old Model 94 give extraction troubles with a load that a newer, tighter gun swallowed in stride. And I've had the newer, tighter gun rip the head off a case weakened by too many firings and full-length resizings, teaching me not to reload .30-30 cases with maximum loads more than two or three times. But the 94 action held like a rock.

As with other levers, it has an ample margin of strength above the standard factory-load pressure of about 38,000 psi. How much? Let me quote a letter on the subject of Model 94 pressure limits that I received from Winchester in 1951: (Continued on page 45)

U.S. MARTIAL PISTOLS

By D. L. LOUGHERY



COVER
STORY

MANY PEOPLE ARE ASKING: What's wrong with America?" They read that the sales of handguns have quadrupled since 1962; that Americans own 90 million guns; that nearly half of the households in this country have at least one gun. And they ask; "Why don't we have restrictive firearms regulations like the Europeans? Why can't Americans be like other people?

They never were!

The National Commission on the Causes and Prevention of Violence has noted the prominent role of violence in the United States from the nation's very origin onward to the present. It has also discriminated between legitimate and illegitimate

violence; i.e., that which is employed in defense of the citizen or the social order against criminals or foreign armies as contrasted with that employed for criminal purposes. Violence, in other words, is not always bad—it is sometimes necessary and inevitable. It is sometimes essential to the protection of the citizens and the country. Firearms are not always bad, therefore, and they have a rightful place in the hands of peaceful men dedicated to preserving the peace. At some point, when government becomes hopelessly estranged from the governed, they may even have a legitimate place in the hands of revolutionaries. For better or worse, firearms do belong in the hands of responsible citizens. Their evolution parallels the

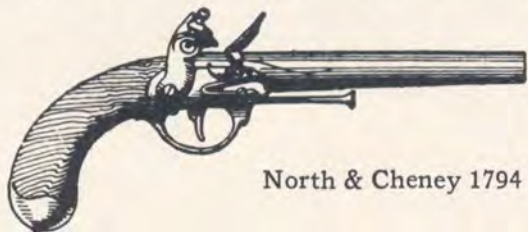


Rappahannock Forge 1775

development of democratic government in this country; guns "came of age" among weapons as the U.S. was born among nations. They grew together as the young American firearms industry of the early 19th Century blazed the trail for the giant American mass production industrial empire that followed.

Hand cannons were known in the 14th Century and by the latter 16th and early 17th Centuries, when the first English colonists were arriving to found Jamestown, the matchlock was giving way to the wheellock. Snaphaunces and flintlocks were not far behind. As the political concepts of freedom and liberty were forged and tested and refined so were the mechanical concepts of gun design until at last, by the 1770's colonists not only had the will to oppose large standing armies of massed European peasants but also the instruments to do so. Their accurate, long-range squirrel rifle "equalizers" were revolutionizing military tactics and providing unheard-of combat capabilities for their rising armies of ill-trained but determined men.

Even as Americans gained their freedom with the end of the Revolutionary War and took their first resolute steps as a new nation the "Age of Reason" had already forged beyond the intellectual and political spheres. Manufacturing processes were being "rationalized." Science and the crafts were on the march hand-in-hand to achieve the industrial revolution. Eli Whitney and his cotton gin were erecting the manufacturing empire which was to launch technological America. Indeed, Whitneyville became a prominent seat of innovation and development. Samuel Colt got his "second start" with a government contract which he fulfilled through the use of Whitney's facilities and some of the most coveted Colts today are the Whitneyville Walkers and Dragoons. (Whitney also made his own revolvers somewhat

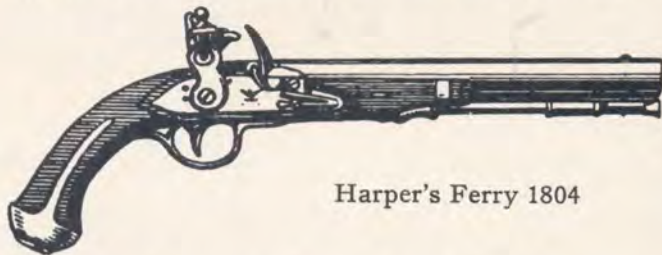


North & Cheney 1794

later, and they are important Civil War collector's items in themselves). Many of Colt's early concepts of mass-production and interchangeable parts emerged from Whitneyville but long before Colt had come of age other U.S. gunmakers were pioneering in industrial technology. Their early applications of production concepts were to shape the nation and its economy. Guns and the gun-making craft were a primary influence and the backbone of this story of inventiveness and progressive refinement can be traced through the history of U.S. Martial Pistols.

Interchangeability — In Mass

Simeon North, the first official U.S. Martial pistol maker, contracted to produce his North and Cheney pistol in 1799. (Cheney, a watchmaker, was North's brother-in-law. His participation probably was largely financial.) At the same time North started out with this American version of the French "Charleville" pistol, Eli Whitney was undertaking a government contract for 10,000 "Charleville pattern" muskets to be known as the U.S. Musket Model 1795. While Whitney is generally acknowledged to be the father of U.S. mass production concepts, North and Captain John Harris Hall, a lesser-known pioneer, were certainly very close behind. North vies with Hall as the first American manufacturer of interchangeable parts. Further, he pioneered the specialization of jobs. Certain gun parts were assigned to one worker, others to

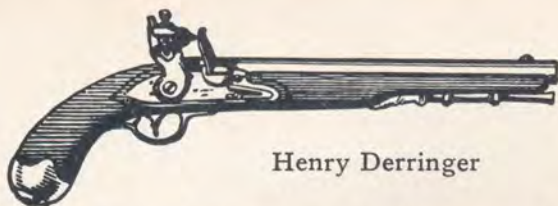


Harper's Ferry 1804

another, and the parts from each could then be assembled by a third employee. He supplied all but three of the first eleven Primary Martial Pistol models, producing nearly 50,000 government pistols between 1799 and 1826. After this he turned to the exclusive production of Hall carbines and rifles.

Capt. John Harris Hall is too often forgotten in the history of U.S. production methods. He not only developed the Hall breech-loading system for rifles and carbines but perfected an interchangeable parts system for producing his guns as well. He was able to sell his ideas to the government in 1811 but could not procure private means to fulfill a contract. Hall went to work at the Harper's Ferry Arsenal, eventually managed to produce his weapons there, and made his first delivery of guns featuring interchangeable parts in 1821. His contract was completed by 1824. Soon thereafter, Simeon North took over production of Hall carbines and rifles and Hall himself produced none of the later percussion versions of his guns. Nevertheless, he played a pivotal part in blazing the trail for interchangeable parts at a time when few others had grasped the importance of this idea. The impact of men like him was to mould a nation's whole approach to manufacturing. Within a few years Samuel Colt would introduce these concepts in London (to the dismay of fine gunsmiths and watchmakers in all the British Isles) and thence throughout the world.

It should also be remembered, apart from Whitney and North and Hall, that interchangeable parts theory and its application to weapons manufacture gained initial notice in this country through the advocacy of none other than Thomas Jefferson. Perhaps the foremost architect of American freedoms and government, Jefferson was a staunch gun advocate, as were nearly all of his contemporaries. He first heard of in-

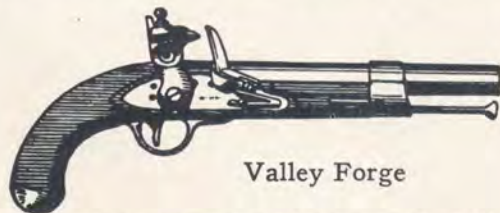


Henry Derringer

terchangeable parts on a trip to France in 1785. While there he is said to have visited the shop of M. Le Blanc, who showed him a bin full of the scrambled parts of new gun locks. Mr. Jefferson was invited to select parts at random and assemble them into finished locks. This system so impressed him that he promoted the idea widely upon his return to America and it was soon thereafter that Whitney and North began to develop their approaches. The French, it seems, contributed not only the prototype for the first U.S. Martial Pistol but the foundation stone for its production process and thus for the future structure of American Industry as well.

The Beginning

The American Revolutionists had no standard pistol of their own manufacture. Except for a few Committee of Safety weapons made mostly from European parts, a sprinkling of ill-assorted Kentucky pistols, and the Rappahannock Forge pistols produced for Virginia Troops, Americans had to rely on captured British hand guns. As the war continued, the alliance with France brought increasing numbers of French weapons. Model 1766 and 1773 Cavalry pistols were the prevailing examples until the advent, late in the war, of the Model 1777. All metal except for its wooden butt, this experimental sidearm outwardly resembled the earlier English "Queen Anne" pistols and other smaller civilian types. Its short frame provided no forward support for a conventional frizzen spring mounting, so the spring was mounted backwards. Produced in .69 caliber at the French arsenals of Charleville, St. Etienne and Maubeuge, it has been commonly known as the "Charleville" pistol. Collectors call it "The Poor Man's North and Cheney." Unlike the North and Cheney, it still survives in sufficient numbers to be reasonable available to those seeking a beginning point for their U.S. Martial Pistol collections. It is



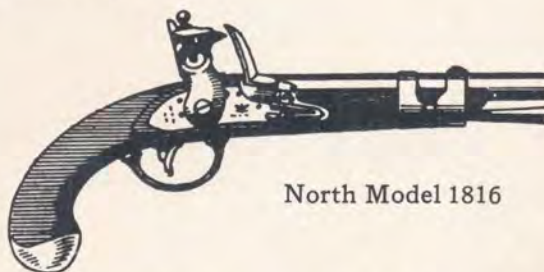
Valley Forge

also a plausible "keystone" for such collections because because it was actually the prototype for the first American-made pistol procured by the Federal Government to equip American armed forces—the aforementioned Model 1799 North and Cheney. (Unfortunately, many fine Charleville pistols have been damaged by counterfeiters who have altered marks and structure slightly to make them saleable as "North and Cheneys." This is one of the more common gun frauds.)

The first American martial pistol, then, was basically a copy of the French pistol commonly issued

to early American soldiers. Its major differences included its longer and more obviously tapered barrel (8½ inches as opposed to the 7½ inch Charleville barrel), an extra barrel screw extending up through the brass frame forward of the trigger guard, and a lateral hole through the head of the ram-rod. These are hardly overwhelming design improvements and the additional half-dozen minute distinctions by which collectors seek to protect themselves against fraud are even less significant. This first American military sidearm, then, was no innovation in itself, although it did copy a French model which had broken away from traditional pistol design. After North's Model 1799 the U.S. returned to more conventional designs.

The second in the primary martial series was the Model 1805 "Harper's Ferry." It was developed and produced at Harper's Ferry, the first government arsenal and was somewhat delicate and refined for a military model. It featured the half-stock, steel ramrod rib and slim lines of contemporary duellers. Thought by many to be the most attractive Martial, it was the model for the crossed pistols insignia of the U.S. Military Police.



North Model 1816

With the next model, the 1808, Simeon North resumed his role as a leading U.S. pistol producer. Neither the 1808 nor the shorter-barreled 1811 which followed were particularly unusual. In the 1812 modification though, a re-designed Model 1811 featured the two ring barrel band of Marine T. Wickham. Seeking a way to expedite quick and frequent disassembly, Wickham produced a band that encircled stock and barrel pins or wedges which had customarily been driven through forestocks to engage stirrups welded to the bottoms of barrels. The Model 1812 modification marked a turning point in martial design and all models thereafter used barrel bands rather than pins. Easy disassembly prompted a redoubled demand for interchangeable pistol parts that could be salvaged, or "cannibalized," in the field. North's agreement for the improved Model 1813 was the first government contract, notwithstanding Hall's earlier negotiations, to specify parts interchangeability and then actually deliver. For this innovation he received an additional one dollar bonus per pistol for the 15,000 pistols ordered by the government. The government also subsidized (through advance payments) his factory's move from Berlin, Conn. to Middletown, Conn. at this time.

By 1813, then, Whitney, North, and Hall through the use of the milling machine and the double-spindle profiler, had responded to Thomas Jefferson's challenge. They had introduced mass production methods to America based on specialized, high-





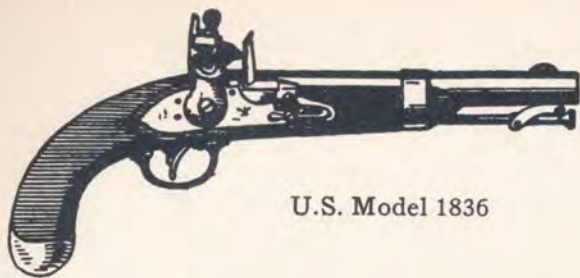
U.S. Model 1836 Johnson Martial conversions from flintlock to percussion. Top to bottom: Bolster added; Nipple installed on barrel; Cylinder drum, shown with small hammer; Cylinder drum with large hammer. From the collection of Nathan L. Swayze; photo by Dr. R. L. Moore, Jr.

volume fabrication of interchangeable parts that could be indiscriminately and speedily assembled or exchanged without custom fitting. Beyond this, North had also developed the job specialization assembly-line concept which led later to the sub-contractor or "vendor" principle. It was the demand and general stimulus of the gun market in early America that prompted this remarkable development, sustained the men who engineered it, and set the pattern for future American industry.

Continuing Process of Improvement

U.S. Martial Pistol refinements continued at an impressive rate. The Model 1816 featured a front sight

on its improved 2-ring barrel band. The 1819 introduced a single-ring band, a manual lock safety, and a steel ram-rod permanently attached by a double swivel or link at the muzzle. (This latter feature was seen earlier on the Model 1812 Virginia Manufactory Pistol, a secondary martial used by Virginia Militia troops. It had also appeared previously on British Tower pistols.) No more wooden or unattached ram-rods appeared on U.S. pistols and this significant change marks the Model 1819 as one of the more important martials. The 1819's return to long, slim "dueller-type" design also makes it one of the more attractive models. Although its manual safety was a failure in saddle holster use and did not reappear on

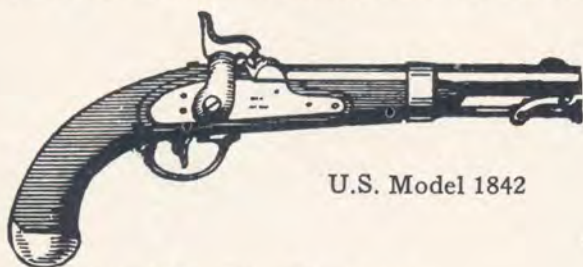


U.S. Model 1836

later weapons, it was a dependable and popular pistol. Many survived the flintlock period and were converted to percussion. In this form numerous 1819's were used by the South in the Civil War.

The Model 1826 resembled the 1819, though somewhat shorter and with a more abrupt down-curve at the wrist. A naval pistol, it featured a sash hook but had no manual safety. Manufactured by North and also by William L. Evans (Valley Forge Factory), it is also found in a secondary martial version made by J. J. Henry of Boulton, Pa. for militia troops. The latter type has no sash hook nor proof marks.

A more compact and rugged design appeared as the Model 1836—the last U.S. martial flintlock. Simeon North had turned toward rifle fabrication and Asa V. Waters assumed a contract for 19,000 pistols of this pattern. Robert Johnson also built 18,000 more. The last Model 1836 was produced for the frontier posts in 1848, six years after a percussion model had been designed and two years after it was actually issued in the martial series. This apparent attavism was not as regressive as it may seem. The harsh alkali-laden air of the frontier attacked brass-and-fulminate caps and corroded them quickly while flint was impervious to the ravages of the wide-open spaces. Further, a soldier running low on ammunition could pick up flint off the prairie and chip it into useful tinder for his pistol, while a man who was out of percussion caps could find no natural substitutes. Early percussion weapons were the guns of garrison soldiers and “city slickers.”



U.S. Model 1842

Percussion, Weapons Systems, and Centerfire

The end of the Model 1836, in 1848, was the end of flintlock pistol production. Many of these arms were eventually converted to percussion at government arsenals within the next few years.

The Model 1842 followed as the first American percussion martial. Designed at the Springfield Arsenal, it looked much like the 1836 except for the difference in ignition systems and the use of brass furniture. It was widely recognized as the best military pistol of its day. Thirty-three thousand of these were produced by Henry Aston between 1846 and 1852. Ira N. Johnson (not to be confused with Robert, the manufacturer of the 1836's) supplied 10,000 more during 1853, '54 and '55. The 1842's saw wide use by both sides during the Civil War, despite the rapid rise

of the revolver as the preferred military sidearm. An interesting Model 1842 variation is the scarce Palmetto pistol, of which only about 2,000 were made. The William Glaze Company, a prominent southern hardware firm, commissioned production of these weapons at the Palmetto Armory in Columbia, South Carolina. They were made there in 1852 and 1853 and received hard use by Confederate Troops during the Civil War. Few survive today but they are widely counterfeited, as the Palm-Tree lock-plate markings and “W'm Glaze Co.” barrel markings can be easily forged over the Aston or Johnson marks of the more common 1842's.

An additional percussion design, variously known as the Model 1842 or the 1843, was introduced for naval use at this time. Produced by Nathan Peabody Ames, the prominent manufacturer of U.S. martial edged weapons, it featured a relatively short barrel with no front sight and a square, flat-butted grip similar to those then evolving on revolvers. The vestigial butt-cap was merely a small brass disc inlet-



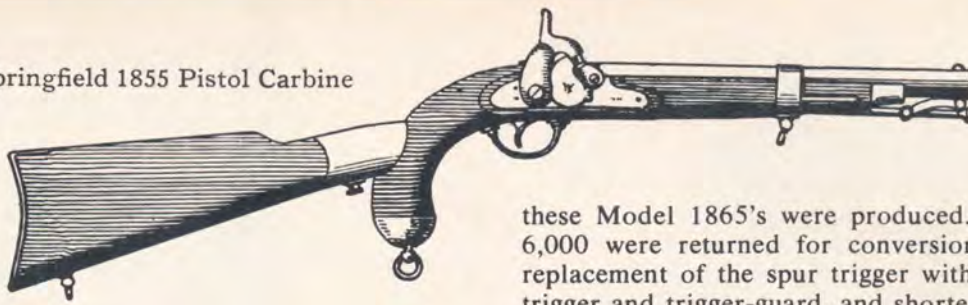
U.S. Navy Model 1843

ted on the bottom of the butt. Most important of all, this pistol was the first and only boxlock in the martial series. The hammer was mounted on the inside of the lock-plate, thereby leaving the right side of the gun smooth. Since the boxlock was a naval model all furniture was brass but it is notable that sash hooks were not provided, probably because the short, smooth-sided gun was intended as a pocket model, despite its bulk and weight. (The later model 1867 rolling block naval pistols also omitted the sash hook.)

The '43 boxlock model was also produced later, in small quantity, by Henry Deringer of Philadelphia. Some of the Deringer versions featured rifling and are therefore significant as the first rifled martials. These also had front sights.

Deringer's late-issue rifled boxlock was the transitional step to the 1855 Pistol-Carbine, a sidearm which illustrates the weapons system concept of design. This concept later became famous with the Stoner infantry weapons system for ground troops and the development of central fire control and aircraft support systems in aerial warfare. It reached the full culmination of its potential through applications in advanced space technology. Systems theory is currently in vogue throughout American government, science, and industry. Although at least as old as the graduated use of the bow and arrow, the cross-bow and the ballista together in the same army, the systems approach has become highly specialized in American society only recently. Once again, as with interchangeable parts, guns provided the medium for a development of far-ranging consequences to the country with the prophetic application of systems concepts to mid-nineteenth century military firearm design.

Springfield 1855 Pistol Carbine



The aforementioned 1855 Pistol-Carbine, perhaps the most graceful and distinctive U.S. martial single-shot pistol, was developed as one of a group or "system" of small-arms which also included a rifle, a musket, and a carbine. These weapons were based on two contemporary inventions, the Maynard tape primer and Minie ball. The Springfield Armory was ordered to develop the system by Jefferson Davis, then Secretary of War in President Pierce's cabinet. Davis was particularly impressed by the Maynard System, while the Minie ball found ready acceptance among practically all members of the arms fraternity. The hollow-skirted Minie ball was readily compressed and could be rammed down a rifled barrel quickly and tightly at the same time. Smooth-bore muskets were no longer necessary for easy loading and rapid fire under combat conditions. With the introduction of the Minie ball (once more, a French innovation), all army small arms could finally be rifled.

The Maynard tape primer mechanism fed a small roll of paper caps to the percussion cap nipple much the same as the modern toy cap pistol. It promised to be a superior replacement for the single-loading percussion cap system of the time, leaving the soldier with solely the barrel to re-load while his percussion system required attention only after every 50th shot for the rifle, or 25th shot for the pistol.

As one of the quartet of systems-related small-arms, the Pistol-Carbine showed great promise. Its long, rifled barrel proved accurate up to 400 yards, more than four times as far as earlier pistols. Its detachable shoulder stock provided versatility, allowing the gun to double as pistol or carbine. Originally designed with a 10" barrel, it was finally produced with a 12" one. While reports of its usefulness vary, it was apparently favored by dragoon troops who used it with stock attached when fighting dismounted. Conventional cavalry troops, however, found it unwieldy and inaccurate as a pistol. Point-of-aim changed when the stock was detached, as the sights were designed for carbine use. The Maynard system did not live up to expectation either and most soldiers soon reverted to individual brass caps. The Pistol-Carbine saw limited service in the Civil War and in the Indian Wars but it was not a popular gun and was soon crowded out of competition by breech-loaders and revolvers. Nevertheless, it had done its part in demonstrating the efficacy of designing an interrelated group, or "system," of small-arms.

Despite the relatively complete take over of revolvers during the Civil War, single-shot martial pistols staged a brief, paradoxical comeback between 1867 and 1871. In late 1865 the Navy contracted with E. Remington and Sons for 5,000 .50 caliber rim-fire rolling block single-shot pistols. Eventually 7,500 of

these Model 1865's were produced. In 1870 about 6,000 were returned for conversion to center-fire, replacement of the spur trigger with a conventional trigger and trigger-guard, and shortening of the 8 1/2" barrel to 7". Apparently these "Model 1870's" were highly regarded because the army contracted with Remington for an extensively re-designed and refined model in 1871. Five thousand surplus Remington percussion revolvers were traded for a like number of the Model 1871 single-shot pistols at a time when no high-powered center-fire revolvers were available. Although the .50 caliber rolling block was better-balanced, faster-loading and harder-shooting for a year or two, it was soon supplanted by the newer cartridge-shooting .45 revolvers and the era of the single-shot martial pistol drew to a close.

Three Dubious Martials

Primary U.S. martials are generally defined as those manufactured at the Harper's Ferry or Springfield government arsenals or those contracted for in significant numbers by government agencies dealing with private manufacturers. Secondary U.S. martials include militia weapons, experimental handguns developed for the government, and side-arms popularly purchased by U.S. officers and soldiers for personal military use. Some of the more distinguished martials within the secondary group, though outside the purview of this article, might be listed as examples. They are the Rappahannock Forge (1775-'81), Virginia Manufactory (1805 and 1812), J.J. Henry (1807 and 1826), Allen Navy Cutlass-Pistol (1837), Waters "All Metal" (1849), and Sharps (1859-1863) pistols.

Apart from these clear-cut categories are several "borderline" side-arms. Two of these are the Springfield Model 1807 and 1817 pistols. Generally conceded to be primary martials because of their place and circumstances of manufacture, these pistols were never issued. In 1818 four hundred of them were manufactured from locks made in 1807 and 1808. Three hundred of these had 1808 barrels. An additional six hundred pistols, differing only in lock plate characteristics were also made with newly manufactured but otherwise identical barrels. The use of the earlier barrels apparently dictated the choice of the obsolete .69 caliber. Those with early locks had goose-neck cocks, frizzens with curved tips, and lock plates with elongated points at the rear. The later locks featured bridged cocks, straight frizzens, and more abruptly pointed or rounded lock plates. The goose-necked cocks, unique among martials, suggest that the original locks may have been purchased in Europe. Awkward and punishing to shoot, these ungainly pieces were eventually disposed of without firing a shot in battle.

A third model, frequently challenged as a complete fraud, is the Experimental Model 1869 Springfield .50 caliber centerfire pistol. (Continued on page 54)



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SAMPLE FOR INFORMATION ONLY

LEVER ACTION RIFLES: HOW STRONG ARE THEY?

(Continued from page 36)

"What the ultimate strength of these actions is has never been exactly determined. Obviously, however, it is higher than proof pressures by a significant amount. Proof loads, by the way, average approximately 50 per cent higher in pressure than the average of standard loads.

"You will note that above we have carefully refrained from giving any exact pressure figures. Such figures can mean a lot or be completely meaningless, depending on test conditions and interpretations thereof. There never yet has been a way developed to determine absolute pressures of these magnitudes, in the less than a thousandth of a second the peak pressure is maintained."

For anyone interested in cartridge pressure figures this last paragraph is, I think, important. Drawing off gases in one empirically chosen location, compressing with them a tiny copper cylinder, measuring minute differences in it and from that computing pressures in thousands of pounds through tarage tables, has never struck me as a particularly precise procedure. The same pressure-lab and technician can doubtless compare pressures for different cartridges with adequate accuracy, but another laboratory and/or operator might get quite different results.

For example, Norma gives 41,000 psi pressure for the .358 Winchester cartridge driving a 250 gr. bullet at 2250 f.s. Dupont's loads for the same cartridge, same bullet weight, same velocity—2230 to 2280 f.s.—with five different powders, all show a pressure around 52,000 psi. As the chap said behind the overweight lady, that's quite a spread.

Even accurate pressure figures do not really indicate how hard the cartridge pushes back on the action when it is fired. "Pounds per square inch" is merely a rate; to find the amount of pressure, you have to know the area it is exerted on. As far as a rifle action is concerned, the pressure area is the inside of the cartridge head, and the size of this varies with different cartridges.

To demonstrate this, let's take four:

(.270, .243, .308, etc.) and the .338 Winchester, a fairly typical Magnum. When it comes to precise measurements and accurate figuring, I'm as error-prone as a pig on a bicycle, but my arithmetic gives these approximate inside rear areas for the four: the .222, .04 square inches; the .30-30, .077 square inches; the .30-06, .092 square inches; and the .338, .116 square inches.

Now suppose all these were loaded to the same pressure level, say 50,000 psi; light for a Magnum, about right for a .30-06, high for a .222, and downright dangerous, supposedly, for a .30-30. None of these four cartridges would exert anything like 50,000 pounds of back push against its rifle action. The .222 would give about 2,000 lbs., the .30-30 about 3,850, the .30-06 group around 4,600, and the .338 and similar Magnums approximately 5,800 pounds. Somewhat different from the usual figures, aren't they?

It's food for thought, but don't let it worry you. Whatever system of pressure measurement is used, whatever figures it produces, the real test of a rifle's safety is how it reacts to proof loads. Lever actions have shown no ill effects from proof firings of cartridges 50 per cent or more stronger than standard loads, and that is pretty conclusive evidence that their safety margin is plenty big enough.

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3. You will receive the answer to your question directly from the expert. Our panel will select the most interesting questions for publication in this column, but you don't have to wait for the magazine to get your answer.
4. Letters with questions which do not have \$1.00 will be disregarded; those without a self-addressed envelope will be answered in the magazine, and **not** directly.

We have enlarged the staff of our Panel of Experts to give you the best possible service on your questions. Remember, write directly to the expert at the address below—do not send questions to GUNS Magazine—and be sure to include the \$1.00 and the self addressed envelope.

Robert Mandel—Antique Arms

P.O. Box 499, Wilmette, Ill. 60091

Shelley Braverman—Modern Arms; Forensic ballistics
Dept. Q, Athens, New York 12015

William Schumaker—Gunsmithing
208 W. Fifth, Dept. Q, Colville, Washington 99114

Les Bowman—Hunting
Box 286, Bountiful, Utah 84010

C. George Charles—Handloading
P.O. Box 3302, Dept. Q, Peoria, Illinois 61614

George E. Virgines—Fast Draw
P.O. Box 2014, Northlake, Illinois 60614

Maj. R. O. Ackerman—Black Powder Shooting
9627 Arvada Ave. NE, Dept. Q, Albuquerque, New Mexico 87112

Dick Miller—Trap & Skeet
Casa Correo Sta., P.O. Box 21276, Dept. Q, Concord, Calif. 95421

Dude Rider

I am planning a hunt to British Columbia in 1972 and have two big questions to ask. I've never been on a horse before and would like to know where I can get a book or information on what to do and what not. Also I'd like to know the best rifle scabbard to buy for the horse-back hunt.

Ralph Coleman
Detroit, Mich.

All the 20-some years I was a big game outfitter in Cody I planned to do a small booklet on western horses and the dude rider. Unfortunately I never got to it, so all I can tell you is: 1. Use a western saddle and make sure the tree is long enough. I'm 5'11" and weigh 175-180 and use a 15" tree, but prefer 15½" for the mountains. 2. Adjust the stirrups "long." Be able to raise your crotch and fanny off the saddle about 1-inch when your feet are into the stirrups to the instep and you lean forward. 3. Ride with your feet "in" the stirrup so you carry the

weight on a fairly straight leg on your instep, not the ball of the foot. Slip your foot back to the ball going over bad trail spots where a horse might fall or when you are about to dismount. 4. Ride with split reins, never tied together or you're liable to have to walk home sometime. 5. Neck rein western horses—get your stable man to show you. 6. Learn to mount and ride with a fairly loose cinch. It's easier on the horse. 7. Write to Pioneer Leather Goods Co., Boise, Idaho and get their catalog. Get a proper length scabbard for the rifle you take, with a flap that snaps down over the rifle at the breech and holds it in the scabbard and also protects the scope. L.B.

Harpers Ferry

I have a flintlock musket that is marked "Harpers Ferry Armory" on the left side of the stock and "Commonwealth of Pennsylvania" on the bottom of the stock. It is in beautiful

condition and has not been altered in any way. It still has the original leather and flint locked in the hammer. Could you tell me when it was made and what it would be worth?

Hollis Hill
Durand, Mich.

Without knowing more about your musket . . . length, stock dimension, caliber, barrel bands, etc., it would be difficult to come up with a true answer to the model of just exactly what you have, but, if the condition of your Harpers Ferry and with its "Commonwealth of Pennsylvania" stamped on the stock, I would estimate its collector's value to be at least \$300 and depending upon its date of origin, it could be much more.—R.M.

1886 Winchester

I have a Model 1886 Winchester, caliber .45-90, but I don't have any shells for it. Can you tell me where to buy shells for this gun, or the empty brass so that I can reload them. I do have some .45-70 brass but they don't have the power to shoot the gun properly. Any suggestions?

Fred Anderson
Buffalo, Wyo.

I suggest you write Ellwood Epps Sporting Goods, Clinton, Ontario, Canada, and ask what dealer in your area can supply the new .45-90 cartridge cases imported into Canada from Australia. Epps has these cases specially made in Australia and has arranged for several dealers in this country to handle them.

Alternatively, you may simply use .45-70 cases with bullets seated shallowly to produce standard .45-90 length. Such cartridges will feed properly through the magazine and will not harm the gun.—G.C.N.

SKS Carbine

I recently purchased a Chinese Communist Type 56 (SKS) carbine in the 7.62 x 39 mm caliber. It is in NRA perfect condition and came with a cruciform shaped bayonet, cleaning rod, cleaning kit with case, bore brush, jag-type patch tip and a carbon cleaning tool for the gas port. Could you give me a guess on the approximate value of this weapon and accessories?

M. L. Rising
Baltimore, Md.

Dealers that are willing to handle such would pay about \$150.00 for the outfit as described by you—and offer it for about \$300.00 to a serious collector. Note that "assault rifles" of this

design require special registration under the National Firearms Act.—

.22 Schwarz

I have a .22 caliber Schwarz, Bern single shot target pistol with a 12-inch barrel and fully adjustable micrometer sights. The trigger is also adjustable and is located inside a hole on the right side of the contoured stock. The gun is loaded by means of a lever that moves either up or down depending upon whether you want the breech open or closed. Upon pushing the lever up, the breech falls down and a single cartridge is pushed in and positioned for fire. Can you give me some history and value on the gun?

Clive Willis
Hickory, N. C.

Your description fits a gun made by Hans Schwarz of Bern, Switzerland circa 1933-39.

These were very fine single shot "free pistols" and if yours is in really good condition it should be worth about \$250.00 to a target shooter that wanted it.—S.B.

Wanda Shells

Is the Wanda shotshell all right for trap shooting and can you tell me where I can get some.

Jerry McWilliams
Mt. Carmel, Ill.

I know of no reason why the Wanda shell is not desirable for trap, in fact, I know that they are extensively used at trap in this area. I suggest you write the Wanda Cartridge Co., Box 45901, Houston, Texas to find where you can get them in your area. D.M.

Remington Shotgun

I have a chance to buy a double barrel shotgun with outside hammers and would like to know the value. The pistol grip and fore-end are checkered, there is a full matted rib with the inscription "Remington & Sons Ilion, N.Y." It has patent dates Aug. 9, 1871 and Apr. 10, 1872. The action is tight and there is no play in the barrels.

Marshall Baker
Marion, Ohio

Hammer shotguns made by American firms such as Colt and Remington have been increasing in value in the past few years as collector's items. I see no reason why a fine grade or fine quality hammer shotgun made by Remington should not fit as a collector's item. Value for your Remington Shotgun, if in fine condition, should be at least \$50.00 to \$75.00. R.M.

HANDLOADING BENCH: A CASE OF SIMPLE ECONOMICS

(Continued from page 8)

type tools can be set up and manipulated to turn out 200 or more rounds per hour.

Ohaus Scale Company has just shown us its new gas-torch bullet casting outfit. This is for the fellow who doesn't want to lay out nearly \$50 for an electric furnace, and whose Hausfrau frowns upon his use of the kitchen range for that smoky, smelly job. It consists of a three-legged trivet or stand for Ohaus's cast lead pot, plus a wire stand for a standard propane torch (such as the Bernzomatic). When set up properly, the torch flame plays neatly around the base of the pot, guided by flanges on the trivet, and melts the lead without undue hot spots. Regulation of lead temperature is accomplished simply by varying the distance between torch and pot. Priced at a mere \$4.95, this little unit should be a godsend to handloaders with hard-nosed wives and slender budgets.

Another most interesting item from Ohaus is its new "micrometer-poise" powder scale. On this unit the tenth-grain sliding poise (weight), usually found on the right end of the beam, is replaced with a cylindrical poise threaded to move in a screw when rotated. It carries index marks identical to those found on a micrometer thimble. Horizontal marks indicate

tenths of a grain, while vertical marks indicate grains. This makes for easy and accurate setting and simple readings. Readings run logically from left to right then: tens of grains, grains, and tenths of a grain. Neat and simple.

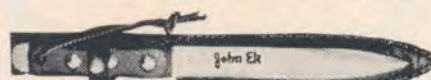
This scale also features an "approach to weight" device. It is formed of a long, limber leaf spring inside the base. A downward extension on the damping arm contacts and depresses this spring when the pan is empty. Thus, the beam is spring-loaded until nearly the full amount of powder is placed in the pan. Upward pressure of the spring then causes the beam to start moving earlier, thus indicating that you are "approaching weight." This indication avoids those distressing bounces that occur and foul up a charge. These and other new Ohaus goodies are covered fully in a new catalog available for the asking. Write Ohaus Scale Co., 29 Hanover Road, Florham Park, N.J. 07932, for it.

Quite a few excellent Winchester 1892 carbines in .44-40 caliber have surfaced recently. These guns, incidentally, came from an Argentine police department, and have been arsenal-refinished, both wood and metal. Collectors may spurn them for that, but shooters won't. I looked at hundreds of them in the warehouse and

all had good, shootable bores—some excellent.

This brings to mind the fact that properly loaded the .44-40 will match anything the .44 Magnum can do. So, if you're thinking about converting one of those '92's to .44 Magnum—hold off while you try it in the original caliber. The .44-40 case has a slightly greater capacity than the .44 Magnum—so, for use in the '92, you can use magnum loading data. You'll be surprised at the results, and can save yourself the price of a conversion. Double check first to make certain you are using undamaged solid-head cases of recent manufacture, and also that the rifle action is clean and snugly fitted. Any excess headspace condition should be corrected before using such hot loads.

Above all, though, don't try to use any such loads in any other guns, especially M1873 rifles and all revolvers. I don't care how pristine your SA Colt or New Service .44-40 sixgun appears, it won't stand magnum-loaded .44-40's. You may have been told it will, but don't believe it. Before proceeding, also check barrel groove diameter. Those I measured went .431" which is fine for .44 Magnum bullets, but there might be a few tight ones in the batch.



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PULL!

By **DICK MILLER**

YOU CAN SHOOT better trap scores if you will observe the very simple basics, then finally concentrate only on one thing, breaking the target. Less than satisfactory scores result when the shooter violates one or more of a few simple basics, such as poor foot position, incorrect hold above the trap, or "peeking".

By poor foot position, I mean that the shooter stands in a position that will give trouble on some shots. For example, the most difficult shots for the new shooter are the extreme angles from either Post One or Five. If you shoot from the right shoulder (southpaws will reverse these directions) and face the trap, or even over the center of the trap for Post One, and your left foot points at the trap house, you will be lucky every time you break an extreme left angle from that post. You can make the sharp left angle shot easier by holding off the left side of the house, and by making sure that your left foot is pointed more nearly to the point where you would break the target.

Why is this basic tenet true? It is true because you can swing a gun barrel faster than you can push it. If you and your pointing foot (the foot opposite your shooting shoulder) are angled too far toward the trap house, and the trap throws you a left angle, you are all bound-up, and have to shove the muzzle at the target instead of swinging smoothly past it. Also, your position is so awkward with respect to the target that the gun butt will tend to slip from your shoulder and your sight alignment will suffer in the process.

The same situation prevails when you move to Post Five, and get the "screamer" to the right side of the trap. If you are facing the trap, instead of away from it, and holding too far toward the center instead of off the right corner, two things result—both bad. First, you have to move the muzzle farther to break the target, and your body ties in a knot. Never

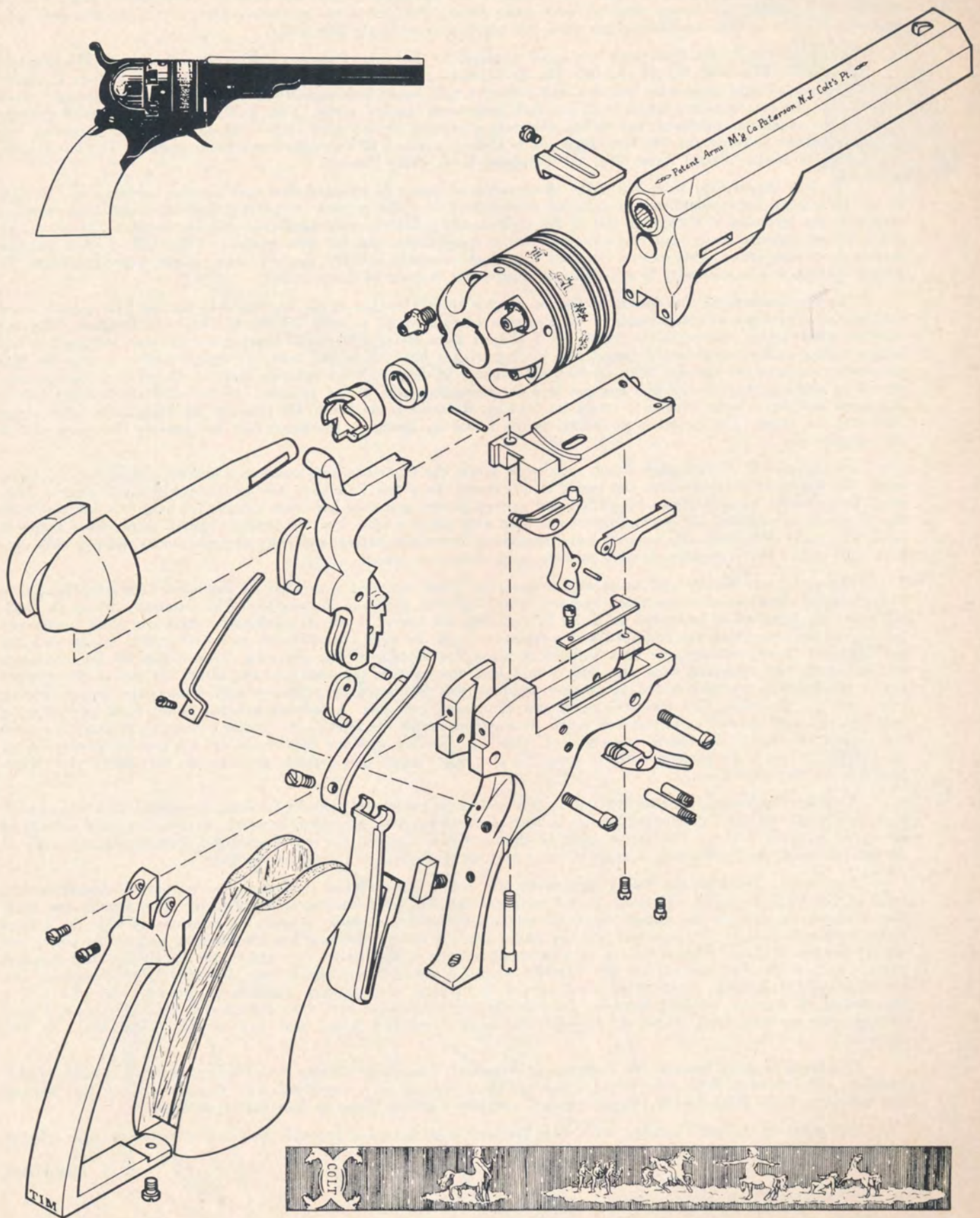
move the muzzle any farther than necessary, and never tie yourself in a knot. Point your left foot to the right of the field, and hold off the right corner for an easier, smoother swing and a broken target on the score sheet. The same advice applies to Posts Two and Four, except for degree. Instead of holding just off the traphouse as for Posts One and Five, you can hold right on the corner, to gain an edge on the target.

If you are still not convinced, think of it this way. I have known some new shooters who held directly over the center of the traphouse for each shot. When they received either a right or a left angle target, they had to move the muzzle eight or nine feet farther to break the target than did the shooter holding off the corner. That eight or nine feet can very easily spell the difference between a lost bird or a broken target.

Another hang-up for the new trapgunner is how high to hold the muzzle above the trap before calling for the target. How high or how low to hold is dictated by at least two factors, one being wind conditions, and the other being trap characteristics. If you hold just above the house for high targets, which result from trap setting or incoming wind, you have to chase the target farther to catch and break it. The solution is simple. If the targets are high, hold a little higher above the trap. If targets are low and flat, possibly because the wind is at your back, you can drop your hold, and shoot almost point blank at the targets. Another peril of a too-high hold is that the target will get lost behind your gun barrel. When it does appear, the tendency is to jump at the target and record a "zero" on the score sheet. If you find that your barrel is hiding some targets, drop your hold until you no longer block them out with the gun barrel.

Less frequently, a shooter will hold consistently too low. One shooter I

(Continued on page 53)



THE PATERSON COLT REVOLVER

The Paterson revolver obtains its name from the New Jersey plant where it was produced. It was the first Colt to be manufactured in any quantity by mass production methods, most of the necessary tools and jigs being designed by Colt himself. Production commenced in 1836, and although the arm was very popular in Texas and on the frontier, the Patent Firearms Manufacturing Company of Paterson went bankrupt in 1841 and ceased production in 1842. It is impossible to determine how many revolvers were made during this period as the records were lost. Estimates vary from as low as 1000 to as high as 6000. In any case, the pistol is exceedingly rare today.

The .34 caliber model illustrated is a good example of the usual Paterson Colt made before 1839. The standard revolver calibers were .28, .31, .34 and .40. The distinguishing characteristics of the early Paterson include octagonal barrels, round, straight, square-backed, five shot cylinders with round locking bolt holes and the concealed trigger system copied from the contemporary single shot, box lock percussion pocket pistol. Two forms of roller engraved cylinder patterns are usually encountered, the earlier depicting a centaur armed with twin Colts engaging two horsemen, and the later pattern showing the familiar stage coach hold-up used on all the subsequent pocket models. The barrels generally bore in script "Patent Arms M^g. Co. Paterson, N. J. Colt's Patent".

The butt shapes vary from a straight, sharp-cornered design to a fishtail flare with rounded corners and a straight or curved bottom. Later modifications included rounding of the cylinder back (to prevent fired cap pieces from jamming rotation), the inclusion of a capping slot in the right standing breech, and chamfered chamber mouths. The early Paterson had no rammer device, but had a cupped end to the cylinder pin for that purpose. After 1839 a short handled loading lever was added. This had no latch but a spring assembled between the lever and rammer kept it in place. To permit loading it was necessary to cut away the barrel lug in front of the cylinder.

The mechanism and functioning of the Paterson is similar to that of the later models, but the lock work is more complicated. There are seventeen parts in the Paterson (details vary) to only five for the later .44 Dragoon. Note the separate hand spring screwed to the frame, the V shaped main spring with swivel bearing and the sear, locking bolt and trigger springs, all screwed to the frame. The folding trigger flies out at full cock, its design making a separate sear necessary to engage the hammer bent. Cocking the hammer pushes the hand upwards rotating the cylinder. On the completion of cocking, the cylinder bolt engages in a corresponding hole in the cylinder. At half-cock the cylinder bolt is depressed and the cylinder is free to rotate for loading. Rotation is clockwise. On pressing the trigger, the latter snaps back into the frame. The barrel is assembled to the frame by means of the usual Colt key passing through a slot in the cylinder pin.

As expected U. S. Ordnance orders were never given, the Patersons were made on a limited, custom delivery basis, hence the variety of barrel lengths and minor modifications. Very few Patersons now extant are identical even in lock-work. Barrels were usually rifled with a scalloped pattern groove of a slow left twist suitable for ball. Grooves vary from five to eleven in number. The normal finish was blue with plain stocks, but all sorts of special arms were made to order with such embellishments as gold inlay, engraving, Damascus barrels and ivory or pearl stocks. Rare models may have four or six shot cylinders, variant calibers, grip shapes, et cetera.

The pistol was usually sold cased with accessories. These included a number of ingenious Colt inventions. One was a special combination screwdriver, hammer, nipple wrench, pick and loading tool. The Paterson without the loading lever was intended to be loaded normally by removing the barrel. A special combination flask and bullet loader was supplied in the case which was equipped with a separate nozzle for each chamber and an indexing hole for the cylinder pin. With the barrel removed, the flask was put in place, one motion of the charging lever filling all five chambers simultaneously. By reversing ends, the flask would load five balls in the same manner. Either the end of the cylinder pin or the combination tool served as rammer. Priming was facilitated by a flat, spring-fed magazine capper holding from forty to fifty caps. This was very rapid and eliminated fumbling. A wooden handled bullet mold and cleaning rod were included, as well as an extra cylinder. As was usual with the later Colts, it was customary to carry a loaded and capped cylinder as the speediest method of reloading. Loading with the 1839 model did not require disassembly of the barrel, but using the rammer with separate charging was slower. Commercial cartridges do not seem to have been produced for the Paterson.

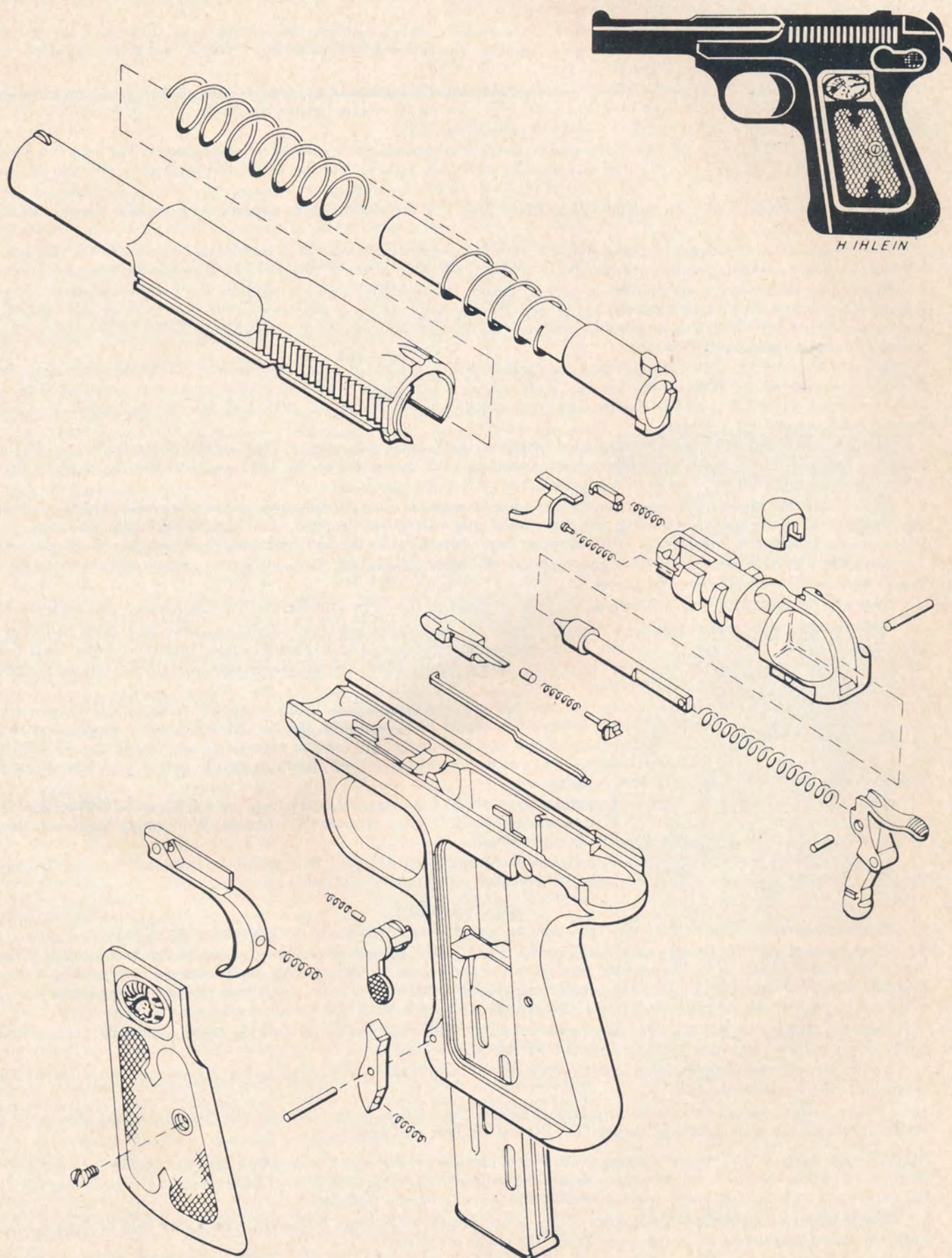
Note on Disassembly: Drive key out to left and draw barrel and cylinder forward. In general, lock disassembly procedure is the same as for later percussion Colts. Great care must be exercised, however, in removing main springs as the swivel is easily broken. The spring must be cramped in a vise and the swivel unhinged. Considering the rarity of the arm and number of variations in assembly, it is best not to attempt to dismantle the lock.

Evaluation: The Paterson was a well made arm and a most radical innovation for its period. Armed with a brace of Colts and equipped with spare loaded cylinders and the rapid loading accessories, the frontiersman was more than a match for nine or ten opponents armed in the conventional fashion. It must be remembered that the United States standard pistol at this time was still the single shot .54 caliber flintlock horse or holster piece. The pistol was eagerly bought by Army officers for use as a personal sidearm in the Indian wars and by the Texans for their constant warfare against Mexican and Indian. The Paterson passed a series of remarkable tests arranged by the Ordnance Department and Colt himself, in which the pistol proved its qualities of endurance, rapidity of fire and ease of handling and loading. It was not adopted, however, since it was more expensive and more complicated than the standard arm. Perhaps most serious of all, it did not resemble the kind of military pistol that had served, if not well, for two centuries.

Compared to later models, the Paterson is excessively complicated, being somewhat less sturdy and liable to malfunctions and breakage. With other arms of the day there can be no comparison. The revolver created the demand that was later to be filled by the Dragoon, and it occupies a unique place in American arms history.

Not many of the small number made have survived, and there are probably very few undiscovered examples in the country.

P. A. MIRANDA



SAVAGE AUTOMATIC PISTOLS

The Savage pistols were invented by Elbert H. Searle, whose first patent on this arm (number 804,985) was issued November 21, 1905, having been applied for October 1, 1904.

This first patent showed the basic elements of the Savage pistols, including the cocking lever "hammer," the semi-locked breech and the magazine which gained increased capacity by squeezing the cartridges from a staggered (double) column at the bottom to a single column at the feed lips.

Searle's next pocket pistol patent (936,369, of October 12, 1909) showed the actual form of the first commercial Savage autopistol. The application had been filed April 25, 1907: the pistol was designated the Model 1907. The arm was 6½" over all with 3¾" barrel and weighed about 19 ounces in caliber .32 ACP.

In this arm, a portion of the top of the cocking lever was exposed, giving the effect of a hammer. The arm was fitted with a "loaded" indicator, a small spring member extending along the right side of the barrel and perceptible through the ejection port.

In 1913 the Model 1907 was adapted to caliber .380 ACP but this was not, apparently, a popular version, and it was dropped about 1915.

The Model 1907 was adopted "as the standard arm for commissioned officers in the Portuguese army"—caliber not given—which probably laid the groundwork for the Portuguese adoption of the Model 1917 as their standard service pistol.

The Model 1915 Savage was similar in general design to the Model 1907. It retained the basic mechanical design, the magazine catch, and other basic features, but it was "hammerless"—a cover was fitted in the cocking lever slot—and it had a grip safety. In caliber .32 ACP it weighed 21 ounces, was 6½" over all with 3¾" barrel, while in .380 ACP it weighed 22 ounces and was 7" over all with a 4½" barrel.

The Model 1915 (in both calibers) and the Model 1907 (in .32 ACP only) continued to be offered until about the time of the appearance of the Model 1917 (or the Model 17, as it is sometimes called). It is interesting to note that some writers have tried to lump the 1907s and 1915s into one type, which they call the model 1910 and describe as having been made in hammer and hammerless versions!

Just when the Model 1917 actually appeared on the market is hard to determine. Their catalogue number 61 (c.1920) shows the pistol in some detail, but a periodical advertisement of 1919 uses a cut of the 1907 and includes the promise that "the .32 Savage Automatic Pistol . . . will be ready by April."

In any case, the Model 1917 was a considerable improvement over its predecessors, good as they were. The form of the grip was changed for better natural pointing, the superfluous grip safety was dropped, the "hammerless" idea was discarded and a long spur was added to the cocking lever. Sharper finger serrations in the bolt replaced the older squared-off grooves.

In caliber .32 ACP it weighed 19 ounces and was 6½" over all with 3¾" barrel, while in caliber .380 ACP it weighed 22 ounces and was 7" over all with 4¼" barrel.

This arm in .380 ACP was adopted as the service pistol of the Army and Navy of Portugal, and it was made until 1928.

The Savage pocket automatics in caliber .32 ACP all had magazines of 10 rounds capacity. The .380s had nine-round magazines. Hatcher (Textbook of Firearms Investigation, Identification and Evidence) states that most types used 6-groove rifling, one turn right-hand in 12". The Pistol Atlas lists a Model 1917 .380 as having 6-groove rifling, one turn right-hand in 16". Groove width was about 2½ times land width.

A parallel development in the Savage line was the .45 which in various forms appeared in the U.S. Government's autopistol competitions of the period 1907-1911. A scaled-up Model 1907, basically, the .45 differed from its smaller brothers only in caliber and size, in the location of the ejection port (on top, in the .45), in the extractor (mounted in the .45 bolt instead of on the breech plug) and in the inclusion of various devices which seemed desirable to the government boards, such as a slide stop and various forms of grip safety—sometimes.

This arm is described in Searle's patent number 985,847, of March 7, 1911 (applied for May 21, 1909). The rifling is six-groove, one turn right-hand in 6". The pistols are about 9" over all with 5¼" barrels. With empty magazine, the pistol weighs about 2 lb. 3 oz.: magazine capacity is eight rounds.

Going to the opposite extreme, Savage also brought out a .25 ACP, but few samples are known to exist. It is a small straight blowback and looks a little like one of the pocket guns might if run over by a steamroller.

DISASSEMBLY—

- 1: Remove magazine. With safety "off," pull bolt to rear and lock it there by turning safety up ("on").
- 2: Lower arm of cocking lever is now visible in its recess in the bottom of the breech plug in the bolt or slide. Press this arm of the cocking lever as far as possible into its recess and rotate the breech plug one-quarter turn clockwise (as viewed from the rear). You can then pull out the breech plug. Support the cocking lever, press back the lower arm of the sear (at the front end of the left side of the breech plug) and ease the cocking lever to the uncocked position.
- 3: Take the grip frame in your right hand, grasp the bolt with your left hand. Pull the trigger and hold it: then move the safety down ("off") and ease the bolt forward off the grip frame.

You must hold the trigger as you ease the bolt off the grip frame, since releasing the trigger permits the sear trip to rise to where it may be hit by the bolt.

- 4: Lift the barrel from its seat in the grip frame. Release the trigger, let the sear trip rise. Grasp the sear trip, move it to a vertical position, move it slightly to the left and lift out the sear trip and trigger.

NOTES—The basis of the Savage "locking system" is a cam lug on the barrel riding in a cam slot in the bolt, the cam effect tending to twist the barrel in one direction—while the bullet in the rifling tries to twist it the other way. Whether or not it works has been hotly debated for many years. Certainly the .45 was a brute to shoot!

Searle regularly assigned three-fourths of his pistol patents to William D. Condit, which may help to explain why some European references mention "Searle and Condit" as pistol designers.

—Allen Pennell Wescott and Roger Marsh

PULL!

PROPER TRAP SHOOTING TECHNIQUES

(Continued from page 48)

know was about to give up the game because of poor scores until it was pointed out to him that he had to move the muzzle very fast to pick up targets when he was starting from a point at the bottom of the trap house rather than over the top. He not only didn't quit after adopting a normal hold but began shooting winning scores, all because of a few feet of distance in muzzle travel.

Probably more targets are lost due to "peeking" than for any other reason. "Peeking" means that the shooter just can't resist the temptation to raise his head off of the stock to take a better look at the elusive target.

Naturally, if you lift your head from the stock, where you are looking and where the muzzle is pointing are on two separate planes, and when never the 'twain meet, a lost bird results. I have heard people in jest threaten to rig themselves with a leather strap which would hold their heads firmly to the stock. So far as I know, no one has ever actually done this, but it would prove an extreme remedy, I'll agree. The more practical remedy is to school yourself to keep that cheek against the stock at any and all times.

If the reader questions my qualifications to editorialize on "peeking", let him ponder this story. Early in my trap career, I lost a new car by shooting a 99 in a 16-yard event, and a 98 in the handicap portion, and all three lost targets were the direct result of my lifting my head for a better view of these important targets. My campaign to quit "peeking" started on the Monday following that Sunday.

And now, for the fourth and perhaps most important ingredient for shooting better scores—that of *concentrating* on the job at hand. This factor can mean a lot of things to a lot of people.

Ideally, it means blotting from your mind *everything* except breaking that one target which you are about to shoot. For many shooters, this can mean forgetting entirely the last post, the next post, this round, the last round, the next round, total score, entry fee, options, and a whole gamut of potential distractions. No one will deny that the mind is capable of some

weird things when the body to which it is attached is standing all alone on a given trap post. There are times when it seems that the fast-flying clay targets are standing still when compared to the racing brain. Unfortunately, none of the things exercising the brain contribute to the business at hand, which must be breaking one, and only one, target.

The brain not only responds to internal stimuli, but is affected by externals, such as crowd noise, other shooters, other fields, loud speaker systems, background, weather, and a whole host of other situations. Winners are rarely affected by any of these distractions. Losers usually suffer from all or most of them. I know many shooters who are only one more degree of mental discipline away from winning big. Mechanically they are perfect, and they will turn in perfect scores when they are able to blot from their minds everything except breaking the one target they are about to call for. It's that simple. If you don't believe me, ask any top winner. Shooters disagree on many things, but not on this point.

Incidentally, this column would not be complete if I failed to remind the reader that to employ the four points for better scores listed here, you must forget the first three when using the fourth and most vital one. If you walk to the post saying to yourself that you must position your feet correctly, place the gun muzzle in the right spot, and not "peek", you might as well save your shell, because you won't have a chance to put the fourth point into operation.

The first three of my keys to better scores and a happier life must be practiced until they become automatic, and require no final review while you are standing on the post ready to call for a target. They should be practiced separately and not in conjunction with the fourth point, which must stand alone.

If all this sounds difficult and complicated, it is not, that is, the advice is neither difficult nor complicated when taken and applied separately rather than all at once. The best approach is to work on each factor until it be-

comes second nature before moving on to the next point. When you hold off the house by force of habit, you need no longer fret on this point. You need see only a few targets to establish a hold which should be good for height. Once you have schooled yourself to snug that cheek against the stock, and it no longer requires a conscious effort to do this, you have licked this one, and are ready to scale the ladder to mental discipline. This may come harder and take longer than all the rest, but in the end it will pay bigger dividends.

I should also not neglect to mention that all this is fun, despite the fact that I might have made it seem grim, in the hope of helping some new shooters to score better. Whether you win or not, shooting is fun, and in any case, doing something well is usually more fun than doing it poorly.



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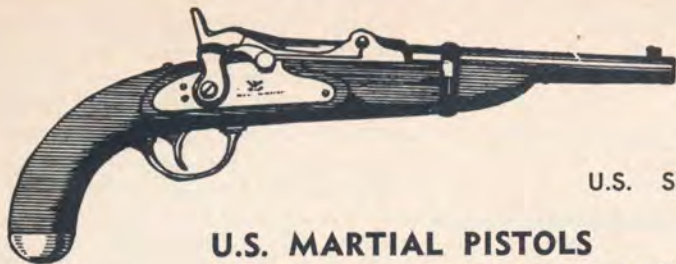


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U.S. Springfield Pistol

U.S. MARTIAL PISTOLS A PART OF AMERICAN HISTORY

(Continued from page 43)

A scaled-down handgun version of the Springfield trapdoor carbine, this gun was never issued but qualifies as a secondary martial because of its experimental nature and its official manufacture. Examples have been seen at the Springfield and Rock Island Museums and presumably are still on display. Nevertheless, there are some who still debate their origin and authenticity.

These guns serve to demonstrate the all too familiar principle that design research and development must occasionally run up against dead ends—no progressive process is infallible.

Martial Pistols in Action

The account of any process of invention and refinement could hardly be complete without considering the effectiveness of the product. We must ask, therefore: "Did U.S. martial single-shot pistols accomplish their purpose?" The answer is a qualified "yes." During the flintlock period no pistol was wholly reliable under the adverse weather conditions and other circumstances that characterize warfare. No martial pistols ever attained the precision of the remarkable Wogdon or Manton duellers. Even if they had, armies could not supply the carefully sized, shaped, and balanced uniform-density lead balls and the uniformly-grained powders that highly reliable flintlock operation demands. In a battle there was little opportunity to clear the fouling and clean the gun completely after every few shots, to measure the charge precisely and assure that all of it lodged in the length of a sticky barrel, and to seat the ball carefully on top of the powder to that it compacted the grains without crushing them. The imprecise ball sizes and the need for fast loading made the use of grease or wadding, or both, necessary to achieve a quick, snug fit. These materials introduce additional hazards to accuracy and reliability. The quality of army flint and the care with which it can be kept sharp, properly adjusted, and promptly replaced cannot compare to the standards maintained for duelling pistols or gentlemen's greatcoat pistols.

Army budgets and the volume of army weapons production could never provide highly tuned, balanced springs and frizzen rollers, hand-honed sears, corrosion-resistant platinum-lined touch-holes, and all the other refinements an individual aristocrat can afford when he knows his life may depend upon his pistol. Nevertheless, within the category of military pistols the U.S. martials were among the best. They may not have been as reliable nor as accurate as the bows and arrows of the Plains Indians but they performed with distinction against English and Mexican troops who used similar weapons. Like most

Revolutionary War and was practically concluded by the beginning of the Civil War. During approximately these same years, though, firearms design spurted through an amazing period of refinement from flintlock to cap lock (percussion) to rim-fire cartridge to center-fire cartridge. Such was the acceleration of invention that percussion lock ignition systems—certainly as significant as matchlocks or wheel locks or the snap haunce/miquelet/flintlock system—lasted at most 50 years whereas several of their predecessors had reigned for two or three centuries apiece.

The last single-shot martial model, except for a brief and minor resurgence between 1865 and 1871, appeared in 1855. Single-shots figured prominently in the War of 1812 and the Mexican Wars, as well as in the more obscure Blackhawk and Seminole conflicts. They were also issued, but not significantly favored, on the frontier. Almost from the beginning Sam Colt's revolvers dogged their footsteps and eventually the six-shooters retired them. Nevertheless, these pistols are relatively refined and distinguished in design and quality. They excel among



U.S. Remington Navy Pistol



U.S. Remington Army Pistol

military handguns of any era, they were mainly intended as last-resort weapons. Certainly the Model 1836 and its Model 1842 percussion counterpart saw strenuous use throughout the Mexican War and long after. The U.S. 1st Dragoons apparently preferred the Model 1842 Astons and Johnsons even after Colt revolvers had been issued. The 2nd Dragoons fired their rifled Model 1842/3 Deringers with good effect in target competition against Colt-equipped Texas Rangers, and led the way across the Nueces River and into the opening battle, or ambush, opposite Matamoras while armed with these pistols.

Final Reflections

Actually, the entire course of U.S. Martial Pistol use covers relatively few years—a narrower span of American history than that between the introduction of center-fire revolvers and the present. The series began after the

their contemporary martial arms throughout the world. Important and necessary in the earlier growth of the country, they enjoyed a respectable role as effective and accepted tools of history.

Americans led in gun development throughout the 19th century. Not only were Whitney, North, Hall, Colt, Ryder, Remington, Henry, Savage, Smith, Wesson, Leavitt, Browning, Gatling and a host of other inventive geniuses behind the inventive upsurge in this country, some of them were also vastly influential abroad (viz. the host of English and Belgian model variations, evasions, patent infringements, and licensed reproductions of Smith and Wessons, Colts, and Remington rolling blocks). It was Samuel Colt, after all, who sold the English army its first revolvers—Colt Navies for the Crimean War.

Even foreign guns in themselves
(Continued on page 56)

often evolved from the basic work of Americans. The Le Mat military revolvers imported from France in the Civil War were invented by a New Orleans dentist. Hugo Borchardt developed what turned out to be the prototype Luger pistol here and then went abroad to sell it. The same can be said for the Yankee inventor Hiram Maxim and his widely known World War I "German" machine gun. The prolific John Browning was an American inventor who finally produced and marketed his designs through F. N. of Belgium. James Paris Lee of "Lee Enfield" fame was an American whose bolt action refinements and central box magazine revolutionized repeating rifle design.

The historical span of U.S. martial single-shot pistols coincides with the most definitive era of the Industrial Revolution in America. These guns

were closely woven into the warp and woof of rising American technology. They had a far greater impact upon industrial and economic history than they had upon military history and it is as early mass production artifacts rather than as weapons that they achieve peak significance. Essentially, the design and production concepts developed here reached far beyond weapons manufacture and set the custom for all of American industry.

America cannot disown its firearms heritage—it is a basic fiber of the nation. To the extent the country rejects this tradition it alienates a fundamental part of itself. Guns, gun ownership, and gun lore are a proud and essential root of this country, not only in sport and recreation and war but in industry as well. They will remain so as long as the true America survives.

OUR MAN IN WASHINGTON NATIONAL HUNTING AND FISHING DAY

(Continued from page 14)

fishermen, are lock in to a national effort for recognition. It will be called "National Hunting and Fishing Day, to be observed each September 23."

The vehicle is Senate Joint Resolution 117 by Senator McIntyre pending before the Senate Federal Charters, Holidays and Celebrations Subcommittee. There are already thirty-three Senators as co-sponsors.

In the House there is a similar measure by Congressman Robert Sikes (D., Fla.). Twenty-five states have already enacted local laws and the Postmaster General has been called upon to issue a stamp commemorating the occasion.

Still, there are powerful forces at work that would have the Federal Government reject any day that recognizes what the so-called "blood sports" and guns have done for this nation. The press tells the public that the killing of wildlife is bad. National organizations are fighting to run hunters off public land, lands which their special taxes have purchased. The Johnny-come-latelys to conservation would have the nation reject sport killing.

Senator McIntyre is trying to set the record straight. Historically the joint activities of hunting and fishing have been held in the highest regard as a prime recreational activity. In feudal Europe, hunting and fishing were held to be royal sport reserved for the nobility. In early America,

game and fish were a major and frequent source of food for the citizenry.

The concern of American pioneers for fish and game led to the first American conservation laws. Early leaders in the conservation movement such as John Audubon, Theodore Roosevelt and Gifford Pinchot, the originator of the word *conservation*, came from the ranks of outdoorsmen whose first interest was hunting and fishing.

Today, that trend continues. The most effective leaders in the fight to save the environment developed their dedication to the cause from their early outdoor experiences in hunting and fishing. It is in their stewardship that our national parks (not used for hunting) have been developed.

For many years, the only funds available to Federal and State Governments for the conservation of natural resources came from special taxes and fees leveled solely on hunters and fishermen. To date, some two and a half billion dollars in tax and license fees over and above all others, including public tax contributions, have been the sportsman's special financial contributions for the conservation of our natural resources.

The purpose of "National Hunting and Fishing Day" is to call attention to the considerable contribution hunters and fishermen make to our national welfare and introduce the non-hunting public to the outdoors with a



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NAVY ARMS ROLLING-BLOCK RIFLE: A SHOOTABLE COLLECTOR'S PIECE

(Continued from page 30)

if this didn't make them weigh still more, the answer is *no*, because their barrels were slimmer *and* were tapered. Most often of what was known as No. 3 weight (that is, measuring some 1.085" in diameter just forward of the receiver), they were given a straight taper clear to the muzzle, shaving off needless pounds. Here was the second difference. Even those early rifles having the larger No. 4 barrels, while measuring the exact same 1.120" at receiver as the Navy Arms replica, had slimmed down to 1.080" at a point opposite the Navy Arms muzzle.

It is my feeling therefore, that this new reproduction would be more authentic, more graceful in appearance, and better balanced if given a lighter 30" barrel (28" at the very least) *with taper*, in place of the present untapered 24" barrel, reducing the size as well to duplicate the perfectly adequate No. 3 originals.

I found it especially odd that this rifle, presumably intended to be a replica of the Remington No. 1 Rolling-Block *sporting* rifle, has an action (including receiver, breech-block and hammer) that more nearly copies the *military* Remington action with its flat-sided nonrebated receiver with round top, and long hammer spur. Observation as well as research con-

vince me that the usual Remington pattern paired octagon barrels with receivers having octagonal flats on top, and round barrels with round-top receivers. Sporting models also had somewhat shorter hammer spurs than did the military versions. I can't help but wonder why this curious mixture of types?

It is seen again in the barrel band of the Navy Arms rifle. Sporting models of the Remington No. 1 (except for the so-called "Baby Carbine"—a light 5 3/4 pound carbine for saddle carrying) did *not* have a barrel band, that being a military appendage. And on Remington military rifles, barrel bands were of blued steel rather than brass. Accordingly, I would personally prefer to see this band omitted entirely. If produced in a military carbine version with round barrel, it should be changed from brass to blued steel.

The non-adjustable open rear sight too is closer to that of a military carbine, and is inadequate for sporting purposes. For greater utility as well as authenticity, it should be either a folding elevating staff sight, or a buck-horn with step-elevator to permit elevation adjustments. The front sight, on the other hand, is truly excellent, consisting of a German-silver blade (as carried by many old rifles

of the period) which shows up well in almost any light and doesn't glint in the sun.

The trigger guard bow of the Navy Arms replica is the same length inside as that of the originals (1 $\frac{3}{4}$ "), but the Navy Arms trigger isn't curved as far to the rear. Hence, the space ahead of the trigger available for a shooter's finger is only 1 $\frac{1}{16}$ " versus 1 $\frac{3}{8}$ " , making for a rather tight fit if the shooter is wearing gloves. I recommend re-shaping this trigger so as to position it closer to the rear of the guard. While on this subject, it seems appropriate to point out that original Remington Rolling-Blocks had case-hardened trigger guards rather than brass. I can't think of any reason why the Navy Arms rifle couldn't be given a case-hardened trigger guard to match the lovely colors of their receiver.

Original butt plates were also steel rather than brass, but this is something I can live with. At least it won't rust. Likewise, other minor differences in details were noted, made I suspect, to provide greater strength, and as such quite acceptable. An example of this is to be seen in the two large pivot pins of breech-block and hammer which appear to be considerably larger than those of original Remingtons. Since these pins transmit the rearward thrust of the cartridge head upon firing, it may be that they were made larger in order to better withstand the pressures of handloaded cartridges.

As we observed earlier, this rifle has proven itself amply strong, and I would call attention to a pair of excellent points in its favor. It has a much smaller firing pin than the originals, and therefore a smaller firing pin hole in the breech-block, better suiting it for increased smokeless powder pressures. As the breech-block is pivoted open, the firing pin is retracted and remains in a rearward position until again struck by the hammer. This is an important safety feature intended to prevent the accidental discharge of a chambered round in the event the breech-block was snapped forward while unsupported by the hammer base.

Extraction of fired cases was positive and crisp, withdrawing an empty without the use of force, far enough for easy grasping by the shooter's fingers. You might say it is an almost ideal function for the rifleman who saves and reloads his cases.

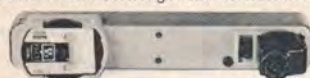
However, the extractor of the Navy Arms rifle (which is of the circular pattern), is *not* stopped in its rearward travel by contacting the receiver under the barrel as in original Rem-

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ingtons, thus requiring that a shooter be sure to push the extractor forward with his thumb or other means before placing said cartridge in the chamber. If this isn't done, it becomes possible for a round to pass over the extractor and enter the chamber *ahead* of the extractor, making it impossible to close the breech.

I developed a habit or routine in reloading this rifle, using the nose of a loaded round to nudge the extractor forward before slipping the cartridge into the chamber. This little trick is easily learned, but it would be a distinct improvement if a "stop" of some sort were to be incorporated in the receiver to check the rearward travel of the pivoting extractor.

Now what about accuracy? Test firing was begun with factory ammunition, using only the open sights that came on the rifle. At 100-yards, shooting from bench-rest, new Winchester brand .45-70-405 jacketed soft point loads grouped 5-shots in $3\frac{1}{2}$ "—not at all bad considering the sights and the cold, windy conditions under which testing was carried out. The only Remington ammo available in this caliber was several years old, probably accounting for its poorer showing.

Before starting to work with handloads however, I searched through my collection of old original tang sights for one having the proper screw-hole spacing, not wishing to drill either rifle tang or sight base. Finding one, no time was lost in mounting it, and preparing what was hoped would be suitable reloads.

Jacketed bullets were first to receive attention, and here it was found that our available supply included 405-grain Winchester flat-nose soft points, 350-gr. Herters round-nose soft points, and 300-gr. Hornady S/J's (Short Jackets). Powders selected for first trials were IMR-4198, #3031 and Hodgdon's #4895.

The Navy Arms rifle proved remarkably consistent, grouping in from 3 to $3\frac{3}{4}$ inches for most individual 5-shot groups, though as expected, bullets of each weight struck at different elevations on the target. The lower the velocity of a load, the higher its bullet impact due to the slower barrel time of the bullet, giving the muzzle more time to rise in recoil. Best accuracy was with 405-gr. Winchester bullets and 44-grains H-4895, followed by 350-gr. Herters with 46-grains H-4895. Another good combination consisted of the 300-gr. Hornady and 45-grains H-4895.

Turning to cast bullets, those on hand at the start of testing were: (1) Some 300-grain plain base Express

bullets which were seriously under-size, measuring only .456" in diameter. Shooting with them was erratic and a waste of time and powder. (2) 330-grain Gould hollow-points (Lyman mould #457122) which miked .4575", but appeared quite incompatible with our rifle. (3) 404-grain round-nose plain base (Lyman #457126) of still larger .4585" diameter, which gave moderately good performance, and (4) Lyman #457483, a round-nose with gas check base, weighing 357-grains cast of linotype alloy.

This latter bullet shot very much more accurately than any of the others, and with the right loads will group equally as well as factory ammunition. $3\frac{1}{2}$ " to $3\frac{3}{4}$ " groups with it were common, and indeed I find myself liking bullets of this weight range

point out a couple of exceptions I've taken to the use of published .45-70 load data in this Navy Arms rifle. They concern the charges of fast-burning IMR-4227 (and Hercules' #2400) contained in the Lyman Handbook.

The maximum charge of #4227 in the 1873 Trap-Door Springfield with either 405-grain jacketed or 482-grain cast bullets is given as 30-grains. For 1886 Winchesters, maximum charges of this powder are 35- and 33-grains, respectively, with the same bullets. On this basis, I felt it would be all right to use 30-grains #4227 behind the 435-grain Ohaus cast bullets in our Navy Arms test rifle.

The sound and feel of that first shot produced some uneasiness, but the sturdy Rolling-Block handled it without protest, so I continued firing. Back



This photo shows the Navy Arms Rolling-Block rifle (lower) beside an original Remington Rolling-Block Creedmoor and graphically illustrates the points made in the text concerning the short, un-tapered barrel, the barrel band, hammer spur and trigger shape, along with the brass guard of the Navy Arms Rifle.

(350-360 grs.) in either cast or jacketed types. Best loads were again 44-grains H-4895, and a new one—35-grains of Herters #103.

Then there arrived on the scene an entirely new mould from Ohaus—the well-known powder scale manufacturer. This mould casts a flat-nose plain base bullet with three grease grooves which cast .460" and were sized down to .459" in Lyman's No. 450 sizer-lubricator. Nominally listed as 405-grains, when cast of the writer's home-mix (approximately 1-to-16, tin and lead), bullets weigh from 434- to 435.5-grains, averaging 435-grains. These were such beautiful and uniform bullets that I felt they simply *had* to shoot. And they did! They are without doubt the finest .45-caliber cast rifle bullets the writer has ever used.

Still loading with #4198 and #3031, groups closed down to an even 3", and these were the bullets used in our ascending pressure test. And speaking of pressure, I promised earlier to

at the loading bench however, our micrometer told a scary story. Those loads of #4227 had expanded cases a whopping .003"-.004" beyond fired factory cartridge dimensions! You'll recall that our maximum loads of #3031 had produced .0015" additional expansion, normally considered about the safe limit. Now here was a load listed for the old and not-very-strong Springfield *doubling* that expansion!

The fact that the Navy Arms Rolling-Block withstood this obviously high and somewhat erratic pressure is a very real tribute to the rifle's strength. Nevertheless its too much to ever be repeated, and most especially I wanted to take this opportunity of warning Springfield users of its potential danger.

Likewise, with this in mind, I note that the still faster burning #2400 is shown in charges only 3-grains less for the same bullets in three-out-of-four of the Lyman tables referred to. I haven't tried those loads and don't intend to after my experience with

#4227. Both of these powders have proven entirely acceptable in light target loads, but I no longer care to recommend them for full-power loads.

Which brings me to a painful admission. Anyone who may have noticed black feathers sticking out of the corners of my mouth will surmise that I've had to eat a bit of crow—and they'll be right. It seems I've proven myself at least partially wrong in a certain opinion held for many years past. I'm referring to the use of slow-burning powders—particularly #4831—in these old straight-sided big bore cases.

Some years ago, I conducted experiments with Hodgdon's #4831 in cast bullet loads for .40- and .45-caliber rifles. Without exception, they were failures, as a result of which I have since consistently recommended against the use of #4831 for such purposes. However, readers have continued to theorize and talk about it in their letters, so I decided to give it another try while working with the Navy Arms .45-70 Rolling-Block rifle.

Results were so astounding that in all fairness, I have to pass them along. No loads with this powder are listed in reloading manuals, (including Hodgdon's) so I was obliged to work up my own. Bearing in mind our pressure experiments with #3031, I decided that 55-grains of #4831 should be about right with the 435-grain Ohaus cast bullets, and this proved to be exactly the right prescription. That first group put all five shots in 1 $\frac{1}{16}$ " at 100-yards, and did it with only .001" additional case expansion—well within limits!

For a rifle whose norm with both factory and standard reloads had been on the order of 3" to 3 $\frac{1}{2}$ " groups, this performance was little short of amazing. Subsequent small charge adjustments in either direction caused groups to open to 2 $\frac{1}{2}$ ", so we standardized on 55-grains #4831. I should warn you that there is considerable unburned powder residue left in the bore after each shot with this powder, but apparently this doesn't have much effect on accuracy.

Having then established that nothing else could come close to equaling this performance with the big cast bullets, our rifle's bore was carefully cleaned in preparation for trying the same loads with jacketed bullets.

Yep, you've guessed it. That identical load of 55-grains H-4831 puts five 405-grain Winchester soft points into 2", and 56-grains of the same conned an equal number of 350-grain Herters round-nose slugs into just 1 $\frac{1}{2}$ ". I still find it hard to believe, but repeated firings verify results which

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can't be disputed.

What's the answer? Why does this slow-burning propellant perform so nicely in these big-mouthed straight cases? Frankly, I'm not entirely sure, but profess to see some connection with this combination of a full-case charge with heavy bullets and CCI Magnum primers. Past experiments with #4831 in this case had always been with lighter bullets and considerably smaller charges.

To verify this conclusion, loads of #4831 were prepared with 300-grain Hornady S/J bullets. The "group" (if you could call it that), was chaotic, spreading over 7". It seems reasonable then that our theory has validity.

At any rate, there's little point in arguing with success, especially when pressures appear reasonable. Please note though, I'm not suggesting that these loads be used in other rifles, even in other Navy Arms Rolling-Blocks! All I'm doing is reporting that the three finest loads in our particular test rifle are: 350-gr. Herters RNSP bullets, 56.0 grs. H-4831 with CCI #250 primers; 405-gr. Winches-

ter FN5P bullets, 55.0 grs. H-4831 with CCI #250 primers; 435-gr. Ohaus Cast P.B. bullets, 55.0 grs. H-4831 with CCI #250 primers; not having chronographed them, I can't say what velocities are.

In summary then, our Navy Arms Rolling-Block has proven to be nicely accurate, as well as rugged and functionally reliable. It will take a strong guy to lug this heavy piece all day in the woods and, as detailed earlier, this writer has the temerity to suggest that improvements could be made in some aspects of its design, handling, sighting and appearance.

But there's no denying the fact that up to perhaps 150-yards or so it will accurately deliver a smashing blow to whatever its aimed at with little likelihood that a second shot will be needed. An added bonus is that it's just plain fun to shoot, as I dare say you'll find if you try one.

Look for the .45-70 cartridge to enjoy new popularity as users of these replica rifles find out what a fine woods-hunting round it is.



TRUTH ABOUT U.S. MATERIEL IS AMERICA SECOND CLASS?

(Continued from page 19)

publicized "bazooka," the recoilless canon, the Norden bomb sight, and of course "The Bomb," are a few of the triumphs. But the men and agencies behind the triumphs have dimmed the luster of their own achievements by insisting that *every* decision they made was right, and that *every* item they produced or chose was best. It just ain't so!

Tanks were among the first items of American military equipment in World War II to be challenged publicly. The challenge was flung by Hanson Baldwin in his excellent and accurately documented reports in the New York Times. Arguments raged in other media. Letters poured in from combat tankmen, offering firsthand testimony that American tanks were less than perfect. Washington, feeling the sting of that storm, defended itself by publishing a carefully worded statement from General George Patton, the American wizard of armored war. If Patton were satisfied, who were mere civilians, or mere drivers of tanks in combat, that they should carp? But what did Patton actually say? The entire text of Patton's statement could be digested in six Patton-esque words: "We're winning, ain't we? Why squawk?"

A highly qualified but non-conforming Ordnance expert, later to be out-cast and frozen in rank for his "treason," answered that in a comment to this writer: "We're winning, yes—but only because we can and do make more of whatever we make than anybody else can make!" We poured some 30,000 tanks into World War II; Ordnance experts themselves said Germany fielded about one-tenth that many—a magnificent tribute to American productivity, but hardly an answer to the question of tank quality. The truth is that American tanks were inferior to German tanks when Patton and British 8th Army armor were being drubbed by Rommel in the Libyan campaigns of 1941 and later; and they continued to be inferior in both guns and armor throughout the war.

American tanks in World War II were better finished, required fewer field repairs, had generally a bit more speed than German tanks; but American tankmen died in, or lived to weep and curse beside their flaming Shermans all over western Europe, demanding bitterly. "What use is good American gunnery when our shells bounce harmlessly off German tanks, and while one hit from Jerry's super-

lative 88 mm gun will blow us to bits? Maneuverable, yes; fast, yes. But we need tanks that can fight, not cars to tour the country in! And the Shermans are no more maneuverable than Jerry's, at that. His Panthers go wherever we can go, and some places we can't!" (German tanks, like Russian tanks, had wider treads, often traveled better in mud and bad terrain than did our Shermans.) Patton's tactic was to send 3 to 5 Shermans against one Panther, two Shermans risking hits from the Panther while one or more Shermans circled to hit the Panther from the rear, before the deadly 88 could be reversed. This required ample room, since the Panther's gun could kill any Sherman at 1,000 yards or better; and it was costly in terms of tanks and lives.

Russian tank experts examined American tanks and said, "They're beautifully made, but—they won't fight." Whereupon Russia, ignoring Lend Lease which would have given her American tanks "for free," designed and built the mighty Stalin, the most powerful tank in the war, low in silhouette, heavily armored, mounting 122 mm and even 152 mm guns—and the T-34, rated by German Colonel-General Heinz Guderian (the Patton of German armor) as the best tank in the war.

Ironically, Russia gave us a T-34 to study and copy. It stood throughout the war, and stands now, rusting and forgotten, in a corner of one of our Ordnance proving grounds. Meanwhile, our Shermans fought through most of the war with guns and ammo patterned after and little if any better than the French 75s, *vintage of 1897*. We did, belatedly, field a few, pitifully few, Pershing (M-26) tanks with good 90 mm guns, comparable at least to the earlier German 88 mm. But the new tanks were not deployed until just before Remagen Bridge, too late and too few in a war already grinding to a finish.

We won, yes. Ordnance people reported with pride that we "killed more German tanks than Germany killed of ours." Perhaps. But official Ordnance reporters also reported (in other context!) that four out of every five German tanks destroyed were killed by our bazooka teams, or by artillery, or by planes. The facts (verified by General George Marshall in his official "Report," and underscored by the acid comments of General Eisenhower after the war), were that wherever tank met tank the German tank, with its better armor and better guns, usually won. Even the Patton tactic of three or more Shermans against one Panther usually (according to many observers) cost

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Finding themselves no longer able to evade such charges, Ordnance spokesmen answered them with two excuses: "1. We build tanks and guns to meet the demands of the using services. And (2), tanks aren't supposed to fight tanks anyway! Tanks are meant to lead infantry, blast out strong points, exploit break-throughs, disorganize the enemy's rear!"

To answer in reverse order, the fact is that tanks *do* fight tanks, and have since tanks were invented. And American tanks with their World War I guns had little luck “blasting out strong points” usually defended by those further-reaching, harder-hitting German 88s!

The first excuse is hardly valid either, whether in theory or in fact. In theory, if research and development is restricted to products demanded by the consumer, progress is brought to a crunching halt—for how can a consumer demand a product he never saw, cannot even imagine? How could tank-fighters, knowing only conventional weapons, have “demanded” bazookas—or aerial bombers have “demanded” the A-Bomb? If science can’t out-reach consumer demand, what use is science?

But in fact, also, the excuse was false. Ordnance did *not* give our tanks the better armor or the better guns—or the less-flamable Diesel-fueled tanks, either—which were “demanded” by tankmen in Europe and in the Pacific. For, yes, in the Pacific, Japanese guns too were cutting Sherman armor, turning the gasoline-powered targets into flaming coffins.

Still a third excuse was offered: "We can't change weapons in the midst of a war!" Why not? Britain, in the midst of the most direct extremity any nation ever survived, changed weapons repeatedly. Russia changed weapons, adopting and adapting with a facility that amazed those who thought the Russian bear was muscle-bound and backward.

Germany was never loath, right up to the bitter end, to change weapons—nor too proud to copy ours! Within weeks of their debut in Africa, the American bazooka was copied, improved, and in use against us. Japan changed the caliber of her basic small arms in the middle of the war. We ourselves changed airplanes from month to month, almost from day to day! Are we not the greatest manufacturing nation in the world, most flexible in methods? Yes, but we are also the most hide-bound in some of our ideas! As one I-won't-be-squelched writer said then, "Sure, it costs money to retool for new weapons. But it costs more to raise sons to die with old

Military minds have too frequently rejected ideas not produced by the establishment. As Hanson Baldwin put it:

"There is no doubt that in some items of equipment we lead the world in quality as well as in quantity. But those items which are the best . . . are usually those which are the outgrowth of commercial usage, designed and developed by private industry or research. Those items in which we lag, and they are many, are primarily the product of military designers, developed chiefly at Government arsenals or proving grounds." It took nerve to throw that indictment at a military establishment flushed with victory in the world's greatest war; but it was true, and it is continuing.

The list of American World War II material which was second best or worse is long, and it is shocking to most Americans. Do you know who had the most powerful battleships in World War II? You think of the German "pocket battleships," and they were certainly the best of their class. But the most powerful battlewagons were the Japanese Yamato and Musashi, armed with 18.1" guns and boasting 75,000 tons displacement, as against our most powerful ships which mounted 16" guns on 57,000 tons displacement.

Did you know that American torpedoes were inferior to both German and Japanese electric-powered torpedoes with magnetic detonators which exploded the torpedo when it felt the pull of the target ship's metal? Or that the "acoustic" and "pressure" sea mines which came so near to throttling British shipping (and hampered our delivery of goods to Britain) were German inventions?

You heard much, at the time, about the Japanese fighter plane, the Jap Zero. It was the best fighter plane in the Pacific at the start of the war. Did you know that the best fighter plane at the end of the war was the German Me 262, the first jet fighter to see combat? U. S. bomber pilots who first saw the 262s streaking through their formations, and fighter pilots who first encountered them, thought they were dreaming! Nothing they had ever seen, nothing they had ever imagined, could match those black nightmares! It was not until years later, in Korea, that we put comparable planes in combat.

Many of our second-bests are chargeable, of course, to the reluctance of a peace-minded nation to concentrate on arms we hope we will never need, to make cars and refrigerators instead of tanks and guns. But we are warned that "a nation which does not

learn from history will see it repeated," and surely there was much we should have learned from World War II. And Korea and Viet Nam suggest that we did not learn enough!

Our tanks have improved, but a man intimately familiar with tanks and tank warfare tells me, "I still wouldn't like to fight our MBT 60 A1 against the Russian T-54-56s. We match them pretty well now in guns, but our tank is 15 tons heavier than theirs—and you can figure for yourself what that does in terms of speed, maneuverability, and ability to negotiate bad terrain."

We still use 81 mm mortars because they are relatively light to move; but the Russian 120s shoot a great deal further, produce much greater blast over a larger impact area, and are still man-handable. In Korea, U. S. mortar units suffered heavily from Russian 120 mortars too far distant to be reached by our 81's.

After World War II a respected German observer testified, "The only point in which U. S. equipment excelled German equipment in quality was in radio and radio-related gadgetry. Having been in America before the war, I know why you beat us there. It was because, in this area, you encouraged and accepted civilian thinking and civilian developments. Many of your best radio-related devices grew directly or indirectly out of civilian research and development. In addition, with your thousands of amateur radio enthusiasts, you had an immense backlog of ready-trained technicians for military use."

But in another area in which a vast backlog of similar civilian research, development, and skill was available—in the field of small arms—the military establishment ignored or rejected civilian help—and goofed time after time in its own decisions.

America had then, and has now, an avid core of gun enthusiasts and experimenters, men with imposing backgrounds of scientific experience in such things as weapons design and ballistics. America had then, as it has now, a host of great arms and ammunition manufacturers who have for a century or more devoted millions upon millions to research and development and the perfection of manufacturing methods. Nowhere in the world was there a greater treasure of gun knowledge, available and free to a nation in need of weapons.

And nowhere in the world has such treasure been less welcomed. Guns and equipment proved in civilian uses are rejected; appraisals of establishment inventions by civilian experts are ignored, suspected of "ulterior motivation." In World War II and

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since, even members of the establishment who ventured minority opinions were shunted aside, frozen in rank, and forgotten. The result? American GIs have been sent into combat with some excellent weapons, yes, but with some others that were disgracefully

inadequate, even crude by civilian manufacturing standards.

We will look next month at some of those weapons; and it will be well to remember as we do so that the pattern that produced them is being repeated.

THE GREAT PISTOL MATCH: PAINE VERSUS BENNETT

(Continued from page 27)

6, 7, 8, 9, and 10 of 1887 but did not accomplish the feat. He did, however, raise his own 100 shot record of 877 to 886 on the first day of shooting. He did not raise the 10 shot record of 95, but equaled or exceeded Chevalier Paine's old record of 90 on 18 targets during the six days. The scores of his six matches were 886, 867, 832, 868, and 876.

Chevalier Paine had no doubt been doing some practicing and to say these six days of shooting attracted his attention would be an understatement. On December 9 and 13 he attempted to better Mr. Bennetts records without success but on December 17 fired two 100 shot matches and in the first raised the 10 shot record to 96 and in the second fired another 10 shot 96 and raised the 100 shot record to 888. On December 22 he fired another 100 shot match in which he raised that record to 904. This match was witnessed by Mr. A. C. Gould, Editor of the outdoor magazine "The Rifle". Mr. Gould had followed very closely these first days of match revolver shooting, and through his position with the magazine, became more or less the official keeper of the records.

The National Rifle Association, which had formed in 1871, had by 1887 become accepted as the controlling organization of most organized target shooting in America. Revolver shooting was just making a beginning but would soon also fall under the N.R.A. rules of uniformity. W. W. Bennett had stated that he would not attempt to break any records held by his brother F. E. Bennett, but as soon as those records fell to Chevalier Paine he gathered several reliable witnesses and shot a 100 shot match on the very next day (December 23, 1887). In that match he equaled the 10 shot record of 96 two times and raised the 100 shot record to 914.

The progressions of the 50 yard 10 and 100 shot revolver records from its establishment to this time are compiled below for ease of review.

Shooter	Date	100 Shot	10 Shot
Paine	10-15-'86	791	84
Paine	3-17-'87	841	90
W. Bennett	5-21-'87	—	91
F. Bennett	11- 4-'87	857	—
F. Bennett	11-14-'87	877	92
F. Bennett	11-25-'87	—	95
F. Bennett	12- 5-'87	886	—
Paine	12-17-'87	888	96
Paine	12-22-'87	904	—
W. Bennett	12-23-'87	914	96

(Shooting was done with a 44 S & W Russian Caliber New Model No. 3 Single Action Revolver.)

This Bennett-Paine competition had sparked considerable debate among the shooters of the country as to who was actually the better shot. Not surprisingly it drew even more debate between Chevalier Paine and Mr. F. E. Bennett—most of this being via letters to the newspapers. The outcome of this prolonged controversy was the setting of a match between Chevalier Paine and F. E. Bennett, the winner of which not only took the purse but would be declared the "Revolver Champion of America." The conditions of the match were set down and agreed upon by both parties. They were as follows:

CONDITIONS OF THE MATCH

"It is agreed by the undersigned to shoot a match with revolvers for one thousand dollars (\$1000) a side, under the following conditions: 600 shots, 100 shots a day for six consecutive days, beginning Monday, June 4, 1888, and ending Saturday, June 9, 1888, at a distance of 50 measured yards, on the Standard American 200-yard rifle

target. Revolvers to be Smith & Wesson .44 caliber, Russian model, with three pound pull, and not over six and one-half inch barrel; ammunition to be factory made, in unbroken boxes, of any of the following companies: United States Cartridge Company, Union Metallic Cartridge Company, or the Winchester Repeating Arms Company. The match to be shot in Springfield, Mass. All conditions of the match not herein specified to be governed by the shooting rules of the National Rifle Shooting Association. Each contestant to choose a judge, these two choosing a referee. If the referee's decision is disputed, the secretary of the National Rifle Association of America shall make a decision which shall be final. In addition to the stakes, the match to be for the championship of America. \$250 a side is hereby deposited with the Boston Herald, which is agreed upon as stakeholder. The balance of \$750 a side shall be placed with the stakeholder on or before Monday, May 28; but it is understood that \$250 each, in addition to the amount now on deposit, shall be deposited on or before Saturday, April 21, 1888. The match shall be play or pay; that is, either party failing to observe any of the conditions herein agreed to shall forfeit all money deposited, and the stakeholder is hereby authorized to pay over the same to the contracting party who fulfills the agreement."

(signed) Chevalier Ira Paine
Fred E. Bennett

"The Rifle" magazine was reorganized and its name changed to "Shooting and Fishing" with Mr. A. C. Gould continuing as Editor. The first issue under this new title was printed on July 5, 1888, just one month after the match was shot. (As a matter of interest the magazine changed titles again on December 13, 1906 to "Arms and The Man" and a final time on June 1, 1923, to "The American Rifleman", the official publication of the National Rifle Association.) In that issue Mr. Gould published an article describing the match and its outcome. He also included his personal observations as to the shooters involved, since he knew both men well enough to feel qualified to do so. One might argue that he may have taken more liberty in injecting his views than may have been called for. Yet we must realize that Mr. Gould was editorializing in a magazine of which he was not only Editor but controlled in all other ways as well. He presented his opinion and did not hide the fact that this is what it was. We might well be grateful he felt the desire to express himself in

the matter since this article and his later book "Modern American Pistols and Revolvers", published in 1888 and revised in 1894, have provided a good portion of the accurate information available on the subject.

MATCH RESULTS

Date	Place	Paine	Bennett
6-4-'88	Springfield	867	837
6-5-'88	Springfield	879	887
6-6-'88	Springfield	860	866
6-7-'88	Providence	872	879
6-8-'88	Providence	WD	878
6-9-'88	Providence	WD	746

Totals 3478 5093

The match was started as scheduled on June 4, 1888, at Springfield, Mass. Firing was done there on June 4, 5, and 6 and then moved to Providence, R.I. for the last three days of shooting. The cause for the move was never clear and even though the original agreement required all shooting to be done in Springfield, no mention of the reason has been found and no protest regarding it was ever made. On the fifth day Chevalier Paine protested the sights used by Mr. Bennett and withdrew from the match. This was a decision the reason for which is not clear, since the agreement stated "The match shall be play or pay—"; that is, regardless of any protest, the match had to be shot to completion or the contestant who failed to finish would automatically forfeit the stakes. Mr. Gould made several observations as to what he felt the reasons were and it appears that he came as close to the truth as we are ever likely to get. Many of the newspaper accounts of the match were evidently quite inaccurate and probably slanted against Mr. Bennett, or so Mr. Gould indicates in the following quote:

"As an illustration of the unreliability of the statements in the daily press at times, we would instance the Bennett-Paine match and controversy. At Providence, the representative of the leading journal was shown the errors he had frequently made, and by an unfamiliarity with the technicalities of pistol and rifle-shooting, many statements which were misleading. He acknowledged his unfamiliarity with the subject and regretted his blunders. It is but justice to state, however, that he received most of his information from Mr. Paine, who for a professional shooter, is the least informed on shooting rules and technical terms as any person we ever met."

This reporter's story was in turn used as the basis for the report appearing in the Boston Herald. From that paper it was copied into most of the weekly papers. Thus we see that

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most accounts will contain the same inaccuracies noted by Mr. Gould. I am afraid this type of problem in the reporting of gun related news is still with us almost 100 years later.

Although Chevalier Paine fired a 100 shot 904 on December 22, 1887, later evidence indicates that from that time until the big match began on June 4, 1888, some six months later, he did not manage to exceed 901 in practice. W. W. Bennett held the record at 914 but, of course, the match was to be with F. E. Bennett. In practice at Walnut Hill just before the match F. E. Bennett had averaged 902 and his highest four scores were 907, 909, 912, and 915. Whether Chevalier Paine was aware of this we do not know, but we can be sure his own practice scores were not very encouraging to him.

The following insight into the characters of the two men by Mr. Gould is of some interest at this point. "There was a battle of youth, inexperience, but careful training against age, experience, but irregular living. Mr. Bennett is a young man, of about 25 years of age. Mr. Paine has probably seen over twice that number of years. Mr. Bennett received his baptism of fire at Springfield. Mr. Paine had shot matches in many countries for the past quarter of a century. Mr. Bennett was most abstemious in his habits, eschewing every form of dissipation. Mr. Paine is known to be a full-liver. Mr. Bennett was careless and indifferent with his revolver, believing all that was necessary to obtain good results was good habits, a perfect revolver, reliable ammunition and good holding. Mr. Paine was punctilious in every thing in connection with his shooting."

The first day of the match saw both men shooting well below their capabilities with Mr. Bennett obviously being the more effected by the initial pressure of the match. That day ended with the Chevalier thirty points ahead but the next saw Mr. Bennett get into stride with ease and pick up eight of his lost points. The next two days left Paine only nine points ahead with two days of shooting remaining. After the first day Bennett had outshot him an average of seven points each day and unless the trend changed, would be ahead by about five points when the match was completed.

This was the situation when Chevalier Paine protested the sights on Mr. Bennett's revolver. The matter should have been decided by Mr. Bull (the referee) and the match continued. Chevalier Paine could then have carried his protest further to the secretary of the N.R.A. if he desired. In-

stead he lodged his protest and refused to continue the match. He knew the rules under which he agreed to shoot and surely knew this would almost certainly result in forfeiture. Just why he chose this course we will never know but Mr. Gould's conclusions would seem to have reasonably good foundations. "No well-informed rifleman doubts but that what his protests were made because he realized that defeat was at hand; he had met his Caesar and well knew Mr. Bennett was likely to win. Defeat does not dishonor a man; if Mr. Paine had fought to the end and lost he would have been applauded, for he has done much to bring the revolver to its present state of perfection and set an example which American marksmen have surpassed. He should have credited it for this work, but be criticised for his lack of courage to combat to the end with those desiring to measure skill with him."

The letter of the secretary of the National Rifle Association to the Editor of the Boston Herald giving the final decision on the outcome of the match is reproduced below:

New York, June 26, 1888

"To the Editor of the Herald: The Paine-Bennett dispute in the recent revolver match having been left to me for final settlement, I have to-day heard the case as presented by the respective judges, Messrs. Dexter and Fellows, and Mr. Bull, the referee. In my judgement the provisions in the terms of the match, that it should be "play or pay," and that "either failing to observe any of the conditions herein agreed to shall forfeit all money deposited," required that each contestant should fire 600 shots. Chevalier Paine having refused to do this, he thereby forfeited his right to the stakes. It is immaterial, in my opinion, whether Mr. Bennett used a proper pistol or not. Chevalier Paine should have shot the match through, if he intended to claim the stakes. If the rules of the association are to be strictly adhered to, the protests are of no value, for paragraph 5 of the general regulations plainly says: "All protests must be made in writing in duplicate." The protest of June 7 was against the sights used by Mr. Bennett as not being what was demanded in the articles of agreement. The terms of the match were that the revolver should be a Smith & Wesson 44-calibre Russian model. There is no mention of any particular sight. I understand that in revolver competitions the descriptions of the pistol allows it to be used either with the wedge-sight used upon military revolvers or with a

target sight; that it is sold with both, and that the latter is the sight which is used by all contestants in competitions with this pistol. Both the competitors used front sights of this description, there being but little difference between them, and I see no reason why one sight is not as fully within the rules as the other, and why both were not admissible. I do not think that the regulation of the National Rifle Association in regard to time allowed competitors to shoot at Creedmoor with rifles apply to a match of this description. There is no limitation in the rules, nor is any enforced, in regard to the time allowed in revolver competition, nor do I consider that the words, "100 shots a day"

can be construed to mean X00 shots in X00 minutes. I therefore decide that the protest cannot be sustained, and that Mr. Bennett is the winner of the match. Yours, very respectfully, John S. Shepherd, Secretary N.R.A."

This match, its participants, and the revolvers used in it received much publicity. It launched an era of match revolver shooting which lasted until the automatic began to reach its peak of accuracy and popularity almost three-quarters of a century later. It helped establish the Smith & Wesson as the choice of the majority of the competition revolver shooters, a reputation still retained by the manufacturer almost 100 years later.



SHOOTING CLOTHES: MANEUVERABILITY IS IMPORTANT

(Continued from page 33)

also just the huckleberry for marsh and bayou.

Boots take many forms. In the muskeg of Kodiak Island and on the Alaska Peninsula, as well as into southeastern Alaska, the hip boot is an arbitrary choice. This is because of the water-saturated state of the tundra. It is a terrain of hillocks and depressions. In the bottom of the latter is an invariable puddle of water. The boot is the answer, but what a sore trial it becomes! Especially when you must walk eight or ten miles daily with the long rubbers strapped to the belt and binding at the knee with every step. Alaska beyond these areas and into the Arctic is a hunting proposition in which maneuverability must give way to warmth. The hunter, during the winter season, must be bundled into down underwear, down trousers, down jacket and a heavy parka of either down or the skins of wolf, seal or caribou. This, in effect, slows his gun movements and makes him awkward and fumbling, but it cannot be otherwise. Polar bear hunting during the tag end of the winter is oftentimes undertaken in temperatures of minus 35 degrees and with only the face exposed to the elements, it is often frostbitten. A rifle with a stock that fits perfectly in ordinary hunting weather, common to the "lower forty-eight," will be inches too long when it is put to shoulder over the layers of clothing.

The innovative clothing designer, goosed by the experiences of the hunter afield, has been quick to offer

new things. Some shooting man in the rain and cold of the Yukon borrowed a pair of chaps from his outfitter. Now a pair of cowboy chaps will weigh 20 pounds and are as tough and unwieldy as though made of tin. This sport came home, having kept snug and dry beneath his cowhide leggings and he put his clothing designer to making a pair of similar chaps; but out of heavy oilcloth. The result was a pair of chapejos that turned the water and snow perfectly, but weighed only a fraction of the kind the cowpoke affects. I have tried rain suits, the kind that have a pair of rubberized breeches and a parka above, and this gear is OK if the rain is only a shower but if you are out in a downpour that goes on all day and keeps it up for ten days, I have yet to find a rain suit that will not eventually leak. The oilcloth chaps will not do this. They are impervious to the elements and are not too expensive.

A long time ago the people who make hunting clothing stole a page from western leather workers and adapted the cowpuncher's chaps to foot hunting. For use by these grouse and quail hunters who must burst their way through thorn and bramble. Southern bobwhites have learned to lift and fly directly to the swamp once the covey is flushed. In the swamp, the bramble is all thorn-tipped. To enter is to tear up pants, shirt and a plentiful amount of hide. Southwestern blue quail live in an environment where every growth sustains a spine. To hunt in this domain is to be in a



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continual battle with the thorn. The hunting chaps, made with a soft leather which is sewed to a cotton backing is the only solution. These may be incorporated in a single pair of trousers; or may be a separate pair of chaps which are dragged on over the under pants. When the weather is hot, as it usually is in the south during the first months of the hunting time, the trousers with the fronting of soft leather are a bit cooler than the separate chaps.

Here, more recently, some manufacturers who design the clothing without ever having battled through a stand of thorn tend to face their hunting trousers with heavy closely woven nylon. This simply will not do. The nylon facing has not yet been made that will keep out some of the thorn of Texas, New Mexico and Arizona. Leather is the only answer. I have a pair of completely worn out hunting pants that were fronted with a plastic material. This synthetic was extremely tough and quite slick. The theory was that a thorn would simply slip off the hardened surface. This was fine thinking on the part of someone who had never come in contact with my particular breed of thorn. It not only penetrated the facing but it ripped it so that at the end of the first season the plastic was torn and shredded. And so were my legs! Along with this is a tendency to skimp a little on material and the facing, whether leather, nylon or plastic does not cover the legs on the sides. Only in front. This is not enough. The reinforcement must almost completely cover the leg to be effective and afford proper protection.

The Spaniard who does his hunting in the grand style has developed items of hunter apparel which are indeed worthwhile. A good deal of his shooting is in the dead of winter and, while the Iberian cold is not the bitter kind, it is sufficiently severe to necessitate woolens. Our "cazador" wears a pair of Andaluz boots—these are a great deal like the cowboy's riding boot—about 12 inches-14 inches in height and with a low walking heel. Into these boots he stuffs some voluminous pants, made purposely loose for easy walking. Over the two—the pants and boots—he pulls a pair of woolen chaps. These are made in what we call in the West, "shotgun" style. That is there are no batwings but simply a straight leg type. These woolen chaps are rather short. They meet and cover the tops of the Andaluz boot by an inch or so. Thus the gunner is not hampered nor burdened when he walks. The Spanish shooting sport is a game of standing ready in a "puesto" or post while the beaters harry the partridge and force them to fly in

great bands over the line of guns. The sportsman must walk from one post to another as the beats continue throughout the day. There are long intervals while he stands motionless in the post awaiting the surging wave of the beaters. It is these pauses between beats when he must be clothed sufficiently warmly as to suffer no chill. The peculiar woolen chaps are then indeed a boon.

Ordinarily, items of wearing apparel like the cowboy chaps are adapted to the huntsman's needs. There are exceptions to this. Where the sportsman's clothes has been popularized for common wear. An example of this has been the safari jacket. This peculiar item of African wear has literally taken the country by storm. It has grown in use and popularity and thousands wear the white hunter's coat who have never been nearer the African bush than a visit to the zoo. Safari jackets are made for papa, mama and all the kids; & or casual dress, for work, picnic, the beach and play. In Indochina, I had a Tonkinese tailor make me a white linen dinner coat in the safari style. I have them of the regulation cotton, also of whipcord, corduroy, denim, camouflage, leather and nylon. In Nairobi, it became quite fashionable among the pro hunters to have the tailors in the town

turn out a safari jacket and trousers of best cavalry twill. These for wear in the New Stanley bar between safaris.

The safari jacket apparently had its beginning among the Kenya landed gentry who appreciated the four voluminous pockets and the easy comfort of the garment. Since many of these landowners were also white hunters during the shooting season they carried the jackets on safari with them where they were quickly appreciated by the American sportsmen. It was only a matter of a little time until American companies like Norm Thompson's were producing a safari coat quite on a par with the best that could be purchased in Nairobi.

Headgear has changed but little with the improvements and innovations which have so brightened the outer's raiment. Eddie Bauer, the inimitable entrepreneur, has a most comfortable down-filled cap for the Arctic. It has a bill on it, and ear flaps and for those hunting moments when the mercury has slipped well below the zero mark it is comfortable indeed. The facts are, however, that hats and caps have changed but little over the years. The east favors a cap, the westerner opts for the hat. I have worn both and usually feel more comfortable in the sombrero. For all, it is



The goose down jacket has been a popular choice among all types of hunters because it offers maneuverability and warmth. This one by Eddie Bauer.

probably a fact that for most of the hunting we do, the cap is the more practical headgear. Certainly for working through brush when the going is heavy the cap is the better. On the other hand, your man of the west, will contend that the cap permits a lot of rainwater to trickle down the back of your neck. Something that does not happen with his broad brim.

An innovation, of relatively recent origin, has been the turn to camouflage suits. These had their beginning in various armies around the world and it was only natural that the camo jacket, trousers and hat would be adapted to the game fields. That the paint-splashed clothing is a boon cannot be gainsayed. The only fly in the ointment is that the wearer is so lack-

ing in definition that there is always the hazard he will be shot by some other hunter who, unable to define the outline of the man, may mistake him for the game! One time I took a camouflage suit to India to hunt tiger. Instead of carrying the conventional camouflage coloration of predominant greens, browns and drab admixtures it was garish red! This was a new twist and the manufacturer assured me that extensive tests had indicated beyond any reasonable doubt that game animals could not distinguish the various colors and the red suit was just as hard to see as the conventional one. I tested this on a series of tigers and came away with the well established belief that tigers were the exception to that rule!

VARMINT POSITIONS: CORRECT POSITIONS IMPROVE AIMING ERRORS

(Continued from page 21)

60 degrees, and sit on your right foot. Place your left elbow exactly under the rifle and just forward or below your kneecap. Your right elbow will be out in the breeze with no place to rest. Although it seems strained at first, raise your right elbow to shoulder level and pull the rifle to your shoulder fairly hard with the right hand. This tends to steady an inherently unsteady position about as much as it can be steadied.

In each of these positions, pivot your body and the rifle around your left elbow and, remember, keep that left elbow under the rifle. Practice these basic positions until they come naturally to you and until they are reasonably comfortable. Many of the better field positions are adaptations of these formal, target shooting positions. I used to hunt with a crew that did not consider shooting sticks "sporting". Although I had done a lot of target shooting, even I was surprised at the shots some of that crew made good. A crow at 175 yards from kneeling position is a tough target no matter how good the rifle and scope. As the Ol' USMC Rifle Instructors used to say, "It's not the dope on the rifle that counts. It's the dope behind the rifle".

For most people, field positions for varmint hunting boils down to finding or carrying a rest from which to shoot. Many a 'chuck has met his end shortly after some hunter took a rest on the bottom wire of a fence or snuggled up

to a fence post to steady a kneeling position. Many, many 'chucks die of old age or other natural causes because novice hunters rest their rifles improperly. Six or eight years ago, a hunting buddy of mine, shotgun type, took the plunge into rifle varminting. He showed up at my place one day with a beautiful collector's item—a Winchester Single Shot, chambered for .22 K Hornets, as well as a good Litschert scope and a loading outfit. In about a month, he was putting five shot groups inside two inch circles at 150 yards with his own reloads. He wanted to hunt alone so that he could make his mistakes alone, which is natural enough. Some weeks later, he reported that the ol' single shot just would not cut the mustard. On a number of occasions he had had a 'chuck or a crow dead to rights at reasonable ranges from a rest, but beyond 80 or 85 yards he was missing them all. I knew the rifle was alright and I knew he was a calm, reasonable type. After discarding a number of esoteric reasons for the rifle not doing the job in the field even though it was shooting well from the bench and checking the scope mounts to see if, maybe, vibration in the car was getting to them we decided to take the single shot out and give it one more chance. My buddy stalked us up to about 115 yards from a cluster of 'chuck holes in a fence row by an alfalfa field ('chuck and 'chuck hunter's heaven by the way) and laid the



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barrel of his rifle on a log. No wonder he wasn't hitting anything. Never, no *never*, rest the barrel on anything. Don't even rest the forend on anything hard unless you supply some kind of cushion. Put your hat on a log and rest the forend on the hat. Didn't you ever wonder why old varmint hunters have such salty looking hats? The last I heard, my old buddy was shooting a 6mm Wildcat on 220 Swift brass and hitting varmints way out yonder. I guess that is why his wife isn't speaking to me anymore.

You may have noticed from the pictures that my rifle has a section from an old trouser leg around the barrel and forend. This seems to be enough cushion for resting on logs, shooting sticks, and fence wires, but it is not enough cushion for rocks or concrete. In addition, the old trouser leg protects the rifle finish.


The British use, or used to use, a fine, low, prone position that works well in varminting, unless grass, or something, gets in the way. With a rest at about the right height under the forend, use the right hand and arm as if in a normal prone position, but instead of holding the forend with the left hand and instead of using a sling, bend the left arm back and with the heel of the hand on the ground

grasp the rear sling swivel. Pivot left and right around the forend rest by moving the whole body and lower or raise the sights by squeezing or relaxing the left hand. This position is solid and it allows one to hide behind anything bigger than a mole hill. Last year in New Mexico a number of coyotes found out the hard way that I could hide in as little cover as they could. Some of them knew I was around, but I could see them looking for me in the wrong spots. It pleases me to use one of their own games on them, but it took the British Army low prone to do it. Even in normal prone position, I would have been sticking out of the rangeland like a sore thumb. If rests of the right size and shape come handy, the basic idea of this position can be applied to modified sitting and kneeling positions. The only drawback to the British Army Low Prone is that one usually has to "break position" in order to reload, but this is seldom a serious disadvantage in varmint hunting.

While you are practicing your sitting position, try crossing your legs and resting your elbows on your legs below the knee. This used to be a competition position until The NRA outlawed it. People that are limber enough to be comfortable in this posi-

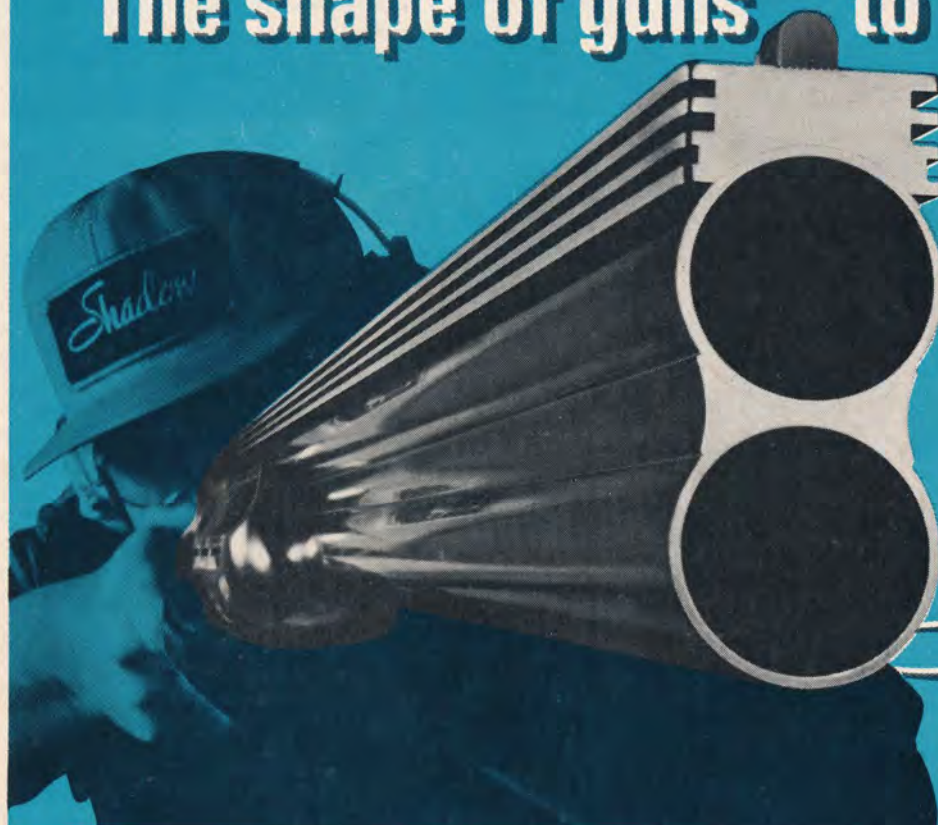
tion swear by it. While you are playing with the sitting position, try shooting with the rifle cradled in your left elbow while your left hand is reaching back and grasping the pistol grip and your right hand.

The kneeling position without a rest is difficult for most people to master. One can get into kneeling faster than most of the other positions. If you develop a good kneeling, you will find that you often use it as a handy and relatively fast alternative to the standing position. A shooting stick, a sapling, or a friendly fence post should be incorporated into most kneeling position shooting. Most varmint hunters who actually hit varmints use kneeling only when they can not see their target from a lower position or when they are in a hurry as with a shot at a coyote that has seen them.

Hunting varmints at long range is a demanding sport. It requires good equipment and it requires a high level of skill. A good crow hunter will have no trouble collecting the big game he goes after. Now that accurate rifles and precision telescope are available in almost any gun store, the only problem for most of us is learning the field position shooting that will help us hit at long range. 

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BEFORE THE WEBLEY: WHAT HISTORY MIGHT HAVE BEEN

(Continued from page 27)

even after the later Enfield revolver had been withdrawn.

The Enfield Mark I which superseded the Adams in 1880 was a hinged-frame, top-break weapon designed to fire the new .476 cartridge, though it could handle the .450 Adams in an emergency. Designed by an American engineer, Owen Jones of Philadelphia, then employed by Britain's Enfield Lock armory, the Enfield was intended to incorporate the quick-loading advantages of such top-break weapons as the Smith & Wesson Russian model and the Galand which contended for the same Russian contract. In 1882 the Mark II Enfield was introduced, with various improvements over the Mark I, but retaining the same general design.

Unlike the S & W, the Enfield cylinder pulled away from the extractor when the weapon was broken open. In the S & W and the later Webley, the extractor was mounted on the cylinder and lifted away from it when the

weapon was opened. The Enfield arrangement, though workable, was cumbersome and expensive, and seems to have had no unique advantages. Since the S & W extractor patent (Dodge's) was not effective in England, it appears that Jones' design took its peculiar form from pride of originality rather than from any attempt at patent evasion. Despite the extractor arrangement, a loading gate was required behind the cylinder, as in the Adams design. The "church steeple" fluting of the cylinder appeared on Collier revolvers as early as 1819 and remained a popular style as late as 1892.

The World War II Enfield .38 was designed at the Enfield Lock armory but was actually an adaptation of the .455 Webley Mark VI which preceded it. The Enfield .38 remained the Government weapon until the changeover to the 9mm Browning High Power automatic in 1957. During the Second World War, .455 Webleys were called

back into service to supplement the .38 Enfields and lend-lease American revolvers. Most of the older weapons went to the Home Guard. It is significant that from 1880 onward all British Government revolvers have been of the top-break type. English inventors worked hard in the Seventies to develop reliable breech locking systems for hinged frame revolvers, with the Pryse and Carter systems proving strongest. Both were used by Webley, the Carter type on the Government revolvers. Meanwhile, the U.S. Army had enough trouble with the weak breech locks of the S & W revolvers and of the experimental Webley Kaufmanns they field tested so that a permanent Army prejudice developed against hinged frame revolvers, and no amount of good engineering design could break that prejudice. Perhaps if Owen Jones had stayed home, or Webley had waited for Carter's patent before trying to sell Webleys to the U.S. Cavalry, things would be different. Perhaps hinged frames would be the rule in America instead of the exception, and would still be the distinguishing feature of a Smith & Wesson revolver instead of the British Webley.



GUNS IN BOLIVIA: COMMUNIST REVOLUTION FAILS

(Continued from page 23)

that Torres had overwhelming strength because he was avidly supported by Lechin, and rapidly arming groups of pro-Communist students. What the reporters never found out was the miner's supplies of 7.65mm cartridges were insufficient and badly overage. These conditions, together with the watchfulness of the regular armed forces who were less than entirely sympathetic with the Miner's Militia, assured that no development of effective military units was possible for the miners; marksmanship practice by the miners was likewise curtailed.

The only other class of weapons commonly used by Torres' civilian supporters were submachine guns of various types, some dating from the Chaco War. At that time, Bolivia had purchased extensive quantities of Bergmann Model 28-2 Submachine Guns made in Switzerland in 9mm Parabellum, and in 7.65mm Parabellum. Lesser quantities of Steyr-Solothurn Submachine Guns were also used. Bolivian students also used the Argentine PAM Submachine Gun in the fighting, this being a close copy

of the U.S. M3A-1 in caliber 9mm Parabellum Submachine Gun of World War II vintage. However, very few pre-World War II ZB 30 or Colt 7.65mm heavy machine guns showed up in the hands of Torres' civilian supporters, and virtually no other rifle-caliber machine guns, or other crew served weapons, were available to the miners and students. Torres was also supported, in the initial stages of the Revolution against him, by officers commanding certain army units which he had gathered around him in La Paz, the Capital, and a measurable part of the air force. These troops had weapons which included the Browning .30 Machine Guns, but little or no artillery, and exhibited a profound restraint about using these weapons against other members of the armed forces.

The Revolution began, principally in the Eastern part of the country, supported by the majority of the army under Col. Banzer. Many Conservative and middle-of-the-road Bolivians felt uncomfortable under the ultra-left government of Col. Torres, but certain developments in the late sum-

mer of 1971 convinced them (and a growing segment of the population) that further continuance of the Torres Government necessarily implied the reduction of Bolivia to a Communist colony. Starting an uprising away from La Paz, where Torres had the support of armed students, proved to be easier than the American Press could imagine, although the reasons for this are clear. Bolivia is one of the most mountainous, high-altitude countries on earth, and communication in the high part of the country is dependent to a pronounced extent on motor and air (rather than rail) transportation. The lines of communication in Bolivia are thin, and military forces at odds with the central government in La Paz can protect themselves from quick assault by central government forces by land by simply using the numerous good defensive positions that the mountainous part of the country affords, controlling the mountain passes through which the roads must go.

Bolivian Army troops largely use three types of service rifles; the Garand in .30-06 and the F.N. FAL in 7.62mm NATO. The latter weapon, equivalent to our own M-14, is a medium weight rifle capable of selective fire, and is one of the most widely adopted Infantry weapons in the world, especially popular in South

America. The Garands received under successive U.S. Military assistance programs are, of course, the same standard weapons which proved so successful in the Second World War and the Korean Conflict. In general, the most "service ready" units of South American Armies have the F.N. FAL, and the less elite units (and the Air Force) have the Garand and the Browning Machine Guns in .30-06. Bolivia is not believed to be any exception, but it has one further development. Some large units have been issued the SIG 7.62mm NATO Caliber Selective Fire Rifle. This weapon is similar to the Swiss M1957 Service Rifle, but modified to the NATO caliber, and has a wood stock and forend. This rifle, first adopted by Bolivia's neighbor, Chile, is known to be both accurate and dependable under moderate service conditions, and is designed around a delayed-blowback locking system similar to the CETME and G-3 (Heckler & Koch) 7.62mm Rifles. It is probable, however, that the SIG costs the Bolivian Authorities rather more than the F.N.-FAL, and probably does not offer any advantage over the proved and very widely used gas-operated design of the F.N. Rifle, which is also capable of very accurate shooting. The Bolivian Army also uses the U.S. 30 MI and M11 Carbines very extensively for all types of formations.

Photos of the final engagements of the Revolution, when Col. Banzer's victory was assured, showed Government troops equipped with U.S. type Carbines (either M1's or M11's), and operating U.S. manufactured Cadillac Gauge V-100 Armoured Cars equipped with Browning .30M1919A-4 type Aircooled Machine Guns. After the students who had fortified San Andreas University in the heart of La Paz as a last ditch attempt to save Torres' Government were driven out by the attack of Col. Banzer's Regular Army Troops and P-51 Mustang Fighters, they were rounded-up and disarmed by troops using U.S. type Carbines and Police with Mauser 7.63mm Pistols. The latter were the only notable example of pistols being identifiably used in the Revolution, although Bolivia has made use of numerous types of pistol equipment, from Colt Revolvers to Parabellum and Mauser 1910 type Autoloaders, as well as more recent models.

The lesson of the Bolivian Revolution is that constituting a "People Militia" can be a futile gesture for Communists and other Leftists, where the majority of the citizens fall out of sympathy with the Leftists' aims and where at the same time, the "Militia"

does not have a practical supply system and adequate training. Under these conditions, the attempt to impose a government on a nation will not survive the defection of a majority of the regular armed forces. Further, menacing pictures of government supporters (or Guerillas) brandishing arms are no substitute for effective arms training and an adequate supply of ammunition and support weapons, no matter how impressive such pictures may seem to the press, both at home and abroad.

Clearly, difficulties were presented to Torres' supporters by their necessary dependence upon rifles which could not match the high volume of fire produced by the rifles which Col. Banzer's supporters had. The Miners' Militia, with careful discipline and training, might have minimized the disadvantages of the relatively low rate of fire of the older, manually-operated rifles they had, if their rifles were all in first rate condition and operated by men skilled in long range shooting. Without formal training in this skill, without telescopic rifle sights, and without dependable and accurate ammunition in adequate quantities, the Miners' Militia could do little. Of course, this was clearly the fault of Col. Torres and Juan Lechin. For all their pretensions of love for the "masses" and the pretended confidence in the Miners' Militia, they distrusted their supporters to the extent that they would not provide the training, ammunition and maintenance without which the weapons of their civilian supporters were of minimal use. The results were that the Torres Government joined the gallery of Leftist has-beens, in company with the Communist supporters of Jacob Arbenz in Guatemala, Kwame Nkruma, Sukarno's failed revolutionaries in Indonesia, and the much vaunted "Palestine Guerillas", whose stern visages and menacing weapons were the most formidable-looking thing imaginable—until put to the final test of armed combat.

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GOLDEN AGE OF SHOTGUNS

by Bob Hinman
(Winchester Press, \$8.95)

That glorious interlude spanning the latter three decades of the last century when whistling canvasbacks and endless phalanxes of greater Canadas darkened the skies; when bobwhites were gunned by the score and prairie chicken bags were measured by the wagon load are all brought immemorably to life in this nostalgia-packed tome on the pristine days of shotgunning. Bob Hinman, a shotgun authority, lives in the very Mississippi River country where the market hunter, the Bogardus-Carver shotgunning extravaganzas were staged; where live pigeon matches were regular affairs, and where that inevitable metamorphosis from muzzle-loading smooth-bore to breech-loader was most keenly felt. Hinman is far too much of a youngster to know of any of this first hand. His facts are gleaned from a most assiduous combing of long-out-of-print magazines, newspapers and books. A task which he must have commenced while a gangling teenager.

The Golden Age of Shotgunning touches gently and lightly on those years when beefsteak was two-bits a pound, when whisky was 75c a jug, when button shoes, coaloil lamps and amusement was decidedly on the simple side. When ecology, air pollution, drug addiction, hippie culture and the anti-hunter were things undreamed. Instead, it tells matter-of-factly and yet sympathetically of the wingshooting that was thought would never

end; of the guns, the cartridges, the chokes, the first hammerless and the first repeating shotguns, and of the rapid evolution from the glass ball to the present claybird. Hinman has the temerity to discuss the inventor of the shotgun choke and names him as Fred Kimble, an American. He details the exhibition shooters and interestingly and knowledgeably offers the details of an almost endless number of matches between such champions as Bogardus and Carver.

The book provides the shotgun student with a most comprehensive listing of almost 400 of the old shotgun manufacturers. No text has ever before managed such a detailed accounting of these long disappeared makes, models and names. It provides an invaluable addition to the collector and the guns historian. This is a highly readable, extremely enjoyable saga of a remarkable era in our wing shooting past, Hinman has written feelingly, sentimentally, and with an expertise which touches the reader. C. A.

The History of Winchester Firearms 1866-1966

By George R. Watrous
(Winchester Press, \$10.00)

To the gun buff, whether he be collector, shooter or hunter and even the non-gun-type, the name Winchester rings a bell that sounds like "rifle." In this book Winchester history is traced back to 1848 with the invention of the "Rocket Ball" bullet and the inventor Walter Hunt. Un-associated as these names may seem, they eventually led to the development of a series of breech loading firearms—the Henry Repeating Rifle and the Winchester Repeating Rifle, Model 1866 being the most famous.

The History of Winchester Firearms 1866-1966 is probably the most accurate, authentic and well-written chronicle of these firearms ever compiled. The handsomely hard-bound book comes in a slip-case cover that features old calendar illustrations depicting Winchester firearms in use. Each type and model is covered in the Winchester lineage with extra-fine black-and-white photos. All the specifications of each gun are listed, including serial number ranges, the dates of manufacture and the total number made. The guns are all chronologically arranged as to date of manufacture, ie, Model 1887 Repeating Shotgun, Model 1890 Repeating Rifle, Model 1892 Repeating rifle, and so on. "Special Notes" on each gun give brief comments on the performance, acceptance, and use of each gun.

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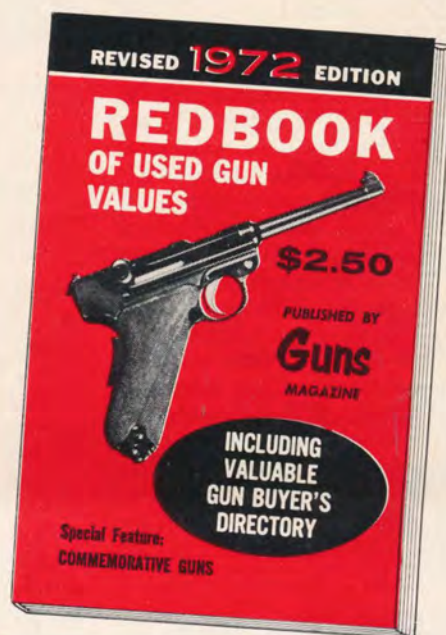
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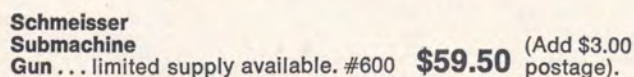
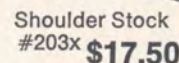
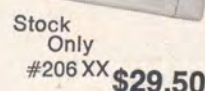
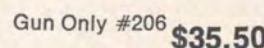
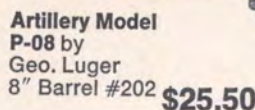
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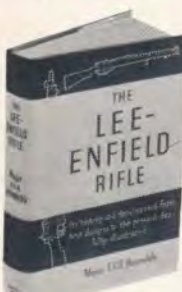
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Winchester Model 101 Trap Guns offer you a touch of shotgun greatness tailored to the way you break 'em best at 16-yard, handicap, or doubles.

It's a complete trapshooting system that puts together machined steel and hand-checked walnut the way you want it from Winchester. Masterfully crafted trap guns made for hands that know the difference.



Model 101 Over-and-Under Trap Gun



Model 101 Single Barrel Trap Gun

Crisp, hand-checked walnut. Pride and performance begin with a finely-crafted shotgun that knows no short-cut . . . with solid walnut that carries the unmistakable feel of crisp, hand-checkering. That's the way it is with the gleaming stock and forearm of every Model 101 . . . made in the traditional way for men who know their guns.



Engine-turned parts: A jewelled finish on breech and ejectors is a fitting touch for a Winchester you'll shoot to win, and show with pride. You get a class of styling and high degree of finish you'd say could come from only hand-gunsmithed shotguns costing far more.

Hand engraving you'll show with pride. Matched to wood that's crafted by masters, each Model 101 Trap gun bears handsome engraving that's hand-carved on the machined steel receiver, top lever, and trigger guard. The engraving is tasteful, and distinctive. But the performance of each Model 101 Trap gun will tell your competitors you've got a real tiger by the tail.



Machined steel for years of championship shooting. Model 101 barrels and breeches are single forgings of chrome molybdenum steel, the finest gun steel available. On Over-and-Under models, individual barrels and breeches are precisely aligned to assure a lifetime of perfect patterns. Receivers are machined from a single forging of chrome molybdenum steel. Barrels and receivers fit together with hairline precision, and convey the feeling you only get from engine-turned Winchester steel.

Most wanted trap gun features: Both straight and Monte Carlo stocks are available on Over-and-Under models in 30" and 32" barrels, with your choice of Full-and-Full, or Improved Modified-and-Full chokes. 32" and 34" single barrel Model 101s in Full choke only. Ventilated rib with center and front beads are standard on all models. Over-and-Under models feature single selective trigger, selective ejectors. Combination safety and barrel selector right under your thumb.

Model 101 Over-and-Under Trap Sets: Two-barrel Monte Carlo Set, with 30" Improved Modified-and-Full Over-and-Under barrels, plus one single 32" Full choke barrel. Three-barrel Monte Carlo Set, with 32" Improved Modified-and-Full, Over-and-Under barrels, Full single barrel, and Improved Modified single barrel.



Gun cases available: Contact your dealer, or Winchester Product Service, for Model 101 Gun Cases for individual models and Trap Sets. **WINCHESTER**, 275 Winchester Avenue, New Haven, Conn. 06504.

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the way you
want it