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SEPTEMBER 1969 75c

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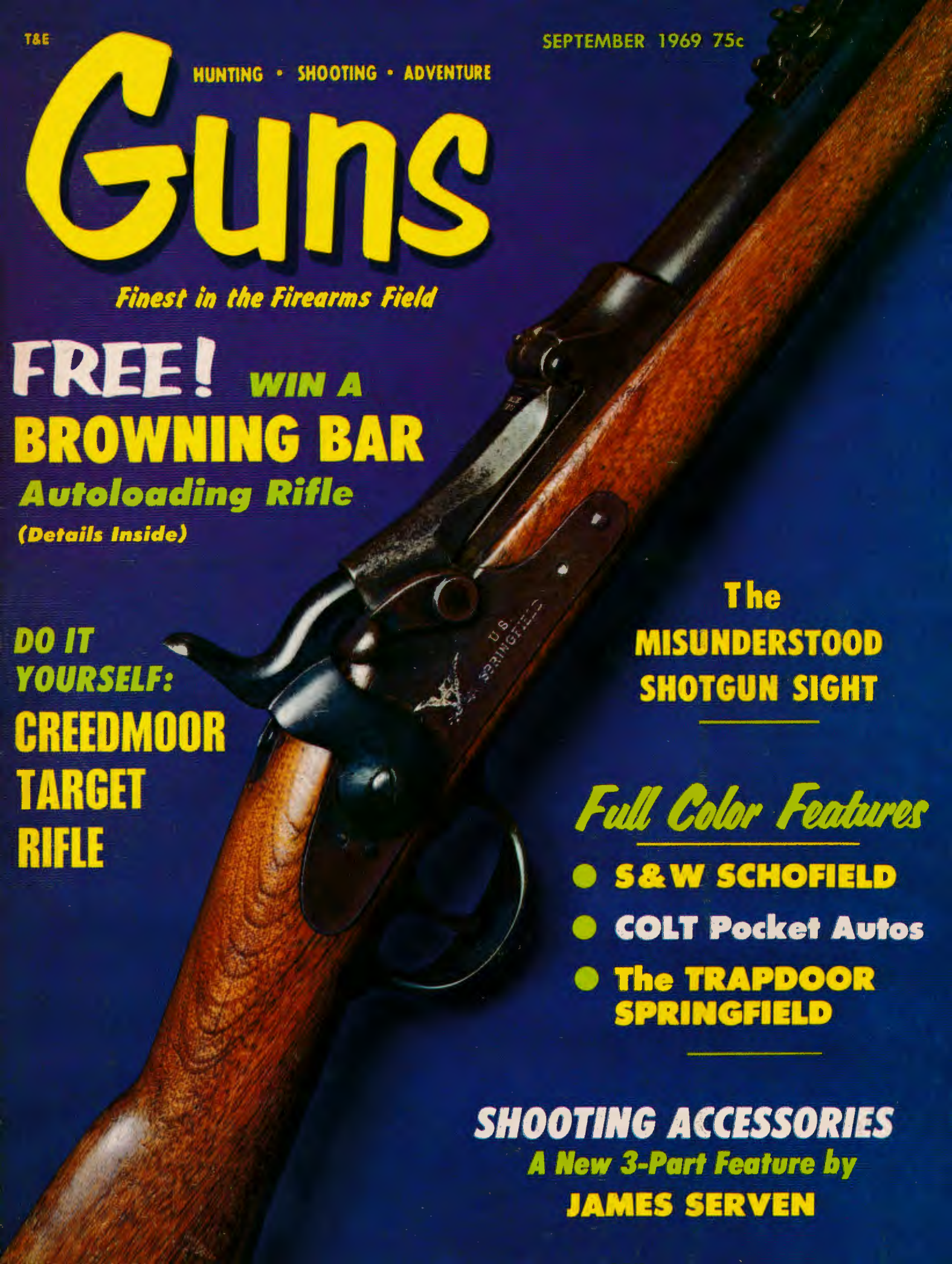
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# TRIGGER TALK

**C**ATCHING UP with some of the past winners of our free gun contest, we are pleased to announce that Mr. Cort Meader of Connecticut is the winner of the Harper's Ferry flintlock replica by Centennial Arms. Mr. John Takach of Erie, Pa., is the winner of a handsome Walker .44 revolver by Replica Arms. Congratulations to them.

Be sure to watch future issues for more exciting free gun drawings.

• • •

The other day, I was shopping around in a sporting goods store, and happened to hear a customer ask for a box of .22 ammo. The clerk asked for his Firearms ID card, and the customer replied: "What? You mean I have to spend \$5 for a card just to buy a box of .22's?" The clerk said that this was so, whereupon the customer said: "The hell with it. Show me a tennis racquet." This took place in Illinois, where it is reported that less than half of the estimated 2 million gun owners have applied for ID cards.

When this magazine hits the stands, we will be in the midst of the vacation season. When you are out of town, why not stop in at a gun shop; if for no other reason than to just say hello, and let the dealer know that not all gun bugs have taken up tennis.

• • •

Speaking of ID cards, the rebuttals to E.B. Mann's article in the June issue are beginning to come in (along with some very hot letters damning us for publishing the article), and the one letter or article selected as a responsible, constructive argument will be published in the October issue.

And speaking of the October issue, we will have a return of the police articles by Col. Rex Applegate, a couple of feature test reports on new guns, and articles for every gun interest.

## THE COVER

The venerable "Trapdoor," or Springfield Model 1873, .45-70. There is a full color print inside, without type, ready for framing, and a meaty article on the .45-70. Photo by Dr. R.L. Moore, Jr.

SEPTEMBER, 1969

Vol. XV, No. 9-9

George E. von Rosen  
Publisher

# Guns

FINEST IN THE FIREARMS FIELD

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News from the...

# SHOOTERS CLUB OF AMERICA

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

JANUARY 1, 1970

## GOVERNMENT CONFISCATES ALL FIREARMS

### "Action follows Federal Registration Act"

Don't let this prophecy come true. Government controls are at an all-time high and the rights of shooting sportsmen and legitimate gun owners are periled as never before in the history of the United States. Public clamor—stirred by inaccurate and intentionally misleading articles and statistics in the mass media—means even more trouble for the rights of firearms owners in the months ahead.

Current trends in firearms legislation are reminiscent in many ways of the furor in the United States prior to enactment of the 18th Amendment and accompanying enforcement legislation. Prohibition was the end result of an intensive public relations campaign by "moralists" and "liberals" of another era. Today, not having learned a lesson from the disaster of the 20's, the antigun factions are destined to repeat past errors. Once again "moralists" and "liberals" may open a Pandora's box for criminals throughout the country.

To prevent infringement on the rights of law-abiding citizens is a long, hard, continuing fight. THE SHOOTERS CLUB OF AMERICA is dedicated to fighting the abuses of our constitutional guarantees. The Second Amendment is under constant attack and we must be vigilant if we are to protect our rights. Both good-intentioned but misguided individuals and also those with dubious motives are intent on disarming the population. If they succeed, it will be a happy day for the enemies of freedom.

THE SHOOTERS CLUB OF AMERICA is protecting the rights of legitimate firearms owners. The criminal use of guns must, of course, be curbed. But to penalize law-abiding citizens in the process is unnecessary and a violation of the

Second Amendment to the Constitution. To deprive shooting sportsmen of their firearms is ignoring the trouble and seeking easy solutions to a serious problem. Of course registration laws will succeed in getting the guns of sportsmen recorded—but these are not the weapons used in the commission of crimes, because the vast majority of sportsmen have a healthy respect for law and order.

The SCA is making these facts known to legislators and is achieving success in winning converts. The disastrous legislation of 1968 is being reconsidered and the possibilities of the most restrictive sections being retracted are rated good. A more concrete example of the power of legitimate shooting sportsmen was recently displayed when the legislature of a Southwestern state adopted a resolution expressing its hope, "that the Congress of the United States will not enact any regulatory legislation regarding guns or firearms."

To change the attitude of legislators is a difficult task. To make our job easier we need the help of many additional members. THE SHOOTERS CLUB OF AMERICA is an effective means to combat irrational legislation, but it can be even more effective with your help. Don't let uninformed legislators hinder your enjoyment of your shooting sports. Don't sit back and hope your rights will be intact next year. Remember the message of the headline! The power of an organization is much greater than the strength of individuals. Help your fellow shooting sportsmen who are fighting for your rights. Use the attached postage-free envelope to enter your membership in THE SHOOTERS CLUB OF AMERICA. Don't wait another day! Your constitutional rights are in peril.

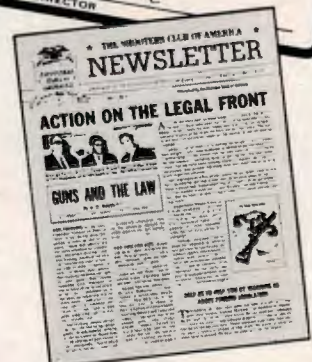
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# CROSSFIRE

## Gun Control Whiz-Kids

You may not think that your gun is registered, but look closer at the law to record the sale of ammunition. These Gun Control boys are pretty sure they've put one over on us this time, by keeping a record of everyone who buys ammunition. They think that they can feed this into a computer and come out with some pretty accurate results as:

How many guns there are.

What caliber they are.

Who owns them. And who is keeping in practice.

With all this information they figure they don't need gun registration to be able to eventually confiscate our guns, just ahead of a Communist take-over attempt.

But we've got them fooled! First, we never buy ammo for our own guns. The fellow on the other side of town, buys for me in small lots, just anywhere. In return I buy for others who have guns of different caliber than mine. Perfectly legal and absolutely sensible. And when those whiz-kids feed all that wonderful data into their computer, it will churn and churn and finally write: God Bless America!

Alfred W. Dobras  
Stratford, Conn.

## Likes "Miniature Guns" Article

I have just read with great interest in your current issue of Guns Magazine for April, 1969 the article by Merrill Lindsay entitled "The Wonderful World of Miniature Guns".

Needless to say this was an unusually good article and you are to be congratulated for publishing this along with the hard work that Mr. Lindsay has put into this article.

Turner Kirkland  
Dixie Gun Works, Inc.  
Union City, Tenn.

## Miniature Mistake!

Just a note here to point out that there is an inaccuracy in the April 1969 issue (Guns Magazine). The miniature rifle on page 41 on the left in the picture at the bottom is a replica of an 1874 French Gras, not a Mexican single shot Mauser. The bayonet is also a Gras bayonet, correct for the 1874 Gras.

Lt. JG John Guidinger  
FPO, New York

## Valiant Views

As a collector and student of the FB Radom 35 pistol for years, I would like to comment on your article in the April, 1969 issue titled, "The Valiant Vis".

I am pleased that the author is impressed with the Radom P-35. As to his comment relative to the long firing pin and the surrendering trick, I believe it to be hearsay. Somehow I doubt that long firing pins were furnished in advance or that the officers had time to fashion their own. I would attribute that, if true at all, to mismatched assembly.

As to VIS. Of course, there is no letter "V" in the Polish alphabet. I know of no explanation accepted by knowledgeable Polish collectors. They vary from the Latin VIS, or "power" (Radom Hi-Power—as opposed to Browning Hi-Power) to the initials of the designer. (The "T" is the same as "and", thus VIS).

I am not sure, but believe that Walther did experiment with the drop hammer safety before the P-35 came along.

Particular exception must be taken to the comment that the omission of the take-down latch makes field stripping difficult. Actually, it is an ingenious simplification. Instead of a

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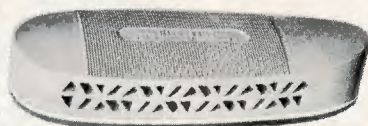
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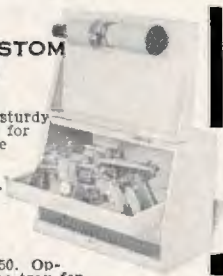
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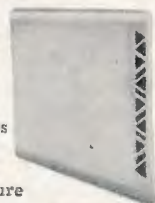
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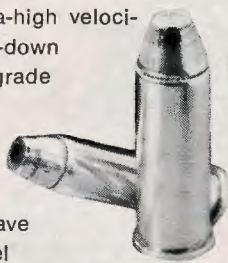
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hold-open latch, one needs only to use the hammer leavering device to lock the slide over a notch in the hammer. This notch is not present in earlier models.

Finally, I hate to subtract some of the scarcity value of my 50 Radoms but will furnish more accurate production figures. These are not accurate to last digit but are to within hundreds:

- 1939 Pre-war Polish Eagle—  
6000 manufactured
- 1937 Pre-war Polish Eagle—  
8000
- 1938 Pre-war Polish Eagle—  
16,000
- 1939 Pre-war Polish Eagle—  
19,000

All 1939s I have seen over 47337 have been mismatched. I have #49014 with a completely blank slide.

- Post 1939 with stock slot and take-down latch—58,000  
(Serial 0001 to E-8000)

- Post 1939 without stock slot and with take-down latch—  
222,000 (E-8000 to Z-9999)

- Post 1939 without take-down latch, brown plastic grips—  
100,000  
(A.001 to K.9999)

- Post 1939 without take-down latch, green parkerized finish and wooden grooved grips—40,000  
(A.001 to D. 9999)

I also understand, but have never seen, that a few late Radoms were produced without the hammer leavering device. These would be exceptionally rare.

I am very pleased to see proper tribute to a fine Polish and German war-time pistol. Since very little attention has been paid to it, my intention is to clarify some data.

J. M. Revolinski  
Houston, Texas

## Commemoratives Under Fire

Donald Simmons in his fine article "A Collector Views: Commemorative Guns" puts quite well these identical thoughts I have held for years. It is unfortunate that the late-starting enthusiasts have to look for specimens that are, in effect, off the market until someone dies. I remember when good examples of nearly all American historical arms could be had for a modest figure. No more.

His description of the "instant collection" in describing the late issue commemoratives is quite apt. But, I suppose there is no real choice now, and anything in the firearms line will appreciate over the years. My only gripe is that the entire matter of these so-called collectors items being offered now is a forced one. In short, it is an exploitation of something of integrity belonging to an earlier and more genuine era. Also, the workmanship (or rather the lack of it) on the modern pieces is truly tragic. The stamped parts of a partially Japanese-made firearm with the name of a legendary hero upon it somehow misses the mark with me. The shortcuts necessary to stay in the market using a modicum of American labor now naturally precludes the earlier handcrafting of real quality in finish. Anyone can see the real stamp of quality on an original or earlier issue; one can only wonder how long this spate of commercialism will continue now. Probably until the profits disappear, which may be quite some time.

I wish to see all guns of reputable manufacturers sold to law-abiding citizens, no matter the vintage. So, I suppose my thoughts are academic, but I still can't help comparing my earlier interest in historic arms with that of today's space-age desire for fulfillment.

Roy Traband  
Okla. City, Okla.

I read Donald Simmons' article on commemorative guns (April) with pleasure and in total agreement. However, since this fad seems to free a few more *real* guns for bona-fide collectors, I'd like to suggest a couple of commemoratives for the arm-makers to unleash their slide-stick boys on.

How about a commemorative brass siege-piece in honor of the 516th anniversary—this spring!—of the fall of Constantinople? They could call it the "Mohammed II Commemorative" in about one-meter caliber. It'd sell for around 25,000 piastres.

Then there's that long neglected classic beauty, the Sears & Roebuck Zulu shotgun. Imagine a handsome cased presentation model with replicas of the exquisite block-stamped lettering: "REG. U. S. PAT. OFF." That'd dress up any man's den! Then, maybe those "collectors" who dig that sort of thing would turn loose some of their .45-70 trap-doors, rolling blocks and the like. Dare we hope?

Richard P. Miller  
Royal Oak, Mich.



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floating design keeps it accurate.

The action's all Bofors steel, too. No cheap stampings or castings. Every part is machined from solid block steel for strength. Then fitted to minute tolerances for a silky-smooth action that stays smooth for the life of the gun. There are even special guide rails to prevent frustrating bolt binding.

Select your pull with our adjustable single-stage trigger. It's cracker-crisp, unchanging. A convenient detachable box magazine accepts full or single loads. It's a straight-line feed system—

no jam-ups surprise you.

Our LSA's rear sight is special, too. It's adjustable for both windage and elevation. It's removable and the receiver has built-in mounting bases for no-fuss scope mounting. Top-mounted safety is right at your thumb for instant action. And our recessed bolt face keeps cartridge heads safely covered.

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## HANDLOADING BENCH

By MAJ. GEO. C. NONTE

I SELDOM CLEAN PRIMER POCKETS unless the cases are to be used for something special or are badly fouled. But, when it does become necessary, I like to get the job done as quickly and conveniently as possible. Over the years, there have been offered a number of brush- and scraper-type gadgets for the purpose, but all I've tried were either slow, ineffective, or inconvenient to use. Until talking to Ed Erdman of Dremel (maker of the Moto-Tool Hand Grinder) a few days ago, I'd half-heartedly given up on the job. He suggested the No. 405 Dremel straight round bristle brush made for use in the Moto-Tool. He sent a few along, so we gave them a try. Though not particularly stiff-bristled, when spun at better than 22,000 rpm in the Moto-Tool, they do a fine job of cleaning crud out of large-size primer pockets. Once worn down a bit, they do as well in the small sizes.

One way of doing it is to hold a half-dozen decapped cases in one hand, and then dip the spinning brush briefly into each pocket in turn. Perhaps a faster method is to clamp the Moto-Tool in its bench stand, switch it on, and then use both hands to feed cases against the brush by the most convenient route. You can do several hundred per hour this way.

• • •

RCBS, Inc., in my opinion, has gone out of its way to take care of the needs of the fellow wanting to form wildcat or hard-to-get cases from readily-available brass. Genial Fred Huntington, honcho there, has made dozens of case-forming die sets for me, quite a few of them for use in working up my book, "Cartridge Conversions" (Stackpole). Buzz Huntington tells me they'll be providing even better service of this sort in the future. In fact, the 1969 RCBS Catalog contains two pages of forming data and lists special forming die sets made for specific jobs. For example, set No. 40021 is one of the more extensive and makes .250/3000 Savage Cases from .30-06 brass. It consists of initial forming dies #1 and #2; trim die;

special expander ball; reaming die, and neck reamer. This is all you need to make perfectly satisfactory .250/3000 cases from cheap military .30-06 brass, and it will work as well with .270, 7mm Mauser, .308 (7.62 mm NATO) and other calibers. Forming die sets are priced as low as \$11, though the foregoing example is the most expensive at \$31.

Over 60 different forming die sets are already cataloged and offered, and more will be on the way. In the meantime, the RCBS Special Order Department can make up dies for almost any forming operation you can imagine. Unless the caliber to be produced is a standard item for which proper specifications exist, orders must be accompanied by three sample cases that have been fired in the chamber in which the formed cases will be used.

While on this subject, it might be worthwhile to bring up a fairly simple method by which you can make up just a few cases for some of those odd-ball chambers. For example, take the 7x64 mm Brenneke. By checking, you'll find that the .30-06 case is very close to the correct head diameter—close enough for safety—and is also approximately the same length. Neck and shoulder diameter are too great and body taper and shoulder location aren't quite right. A 7mm Mauser die will squeeze the neck down to the right size; the shoulder to a bit less. It will also shove the '06 shoulder back, depending upon how deep the case is run into the die. Just run the .30-06 case into the 7mm die until the bolt will barely close on it in the 7x64mm chamber. Perceptible pressure should be required on the bolt handle to fully chamber the case. This indicates the new shoulder is being crushed against the chamber shoulder, and this insures proper headspace. At this stage, the reformed case will have the wrong shoulder angle and body taper, but will enter the chamber and is safe to fire. Fire forming with a moderate-to-light load will fill it out to fit the chamber completely. Two or three

(Continued on page 13)



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# OUR MAN IN WASHINGTON



By CARL WOLFF

The Supreme Court of the United States last spring, by rejecting a petition for a constitutional review of the New Jersey gun law, has not approved the law. Rejecting the petition as "not presenting a Constitutional question of consequence," only judged the point of law raised by the petitioner; that, under the law, the state of New Jersey had the right to issue regulations asking if an applicant for a firearms license belonged to any organization advocating the overthrow of the U. S. Government or that of the state.

Walter Marvin, Jr., on August 26, 1966, made application for a Firearms Purchase Identification Card, only to test the law. He refused to answer question No. 22, which asked if he had been a member of any organization which advocates or approves the commission of acts of force or violence, either to overthrow the Government of the United States or of the state of New Jersey.

He wrote as follows: "I decline to answer this question because it seeks to penalize membership in organizations against which there has been no judicial finding of the commission of a crime. Moreover, the vagueness and the imprecise language of the question exposes the applicant to heavy penalties unfairly. Inasmuch as giving 'False Information' in response to any question on the application, including question 22, is a high misdemeanor under . . . (New Jersey law.) I invoke the dictum of the U. S. Supreme Court that the terms of a penal statute creating a new offense must be sufficiently explicit to inform those who are subject under it what conduct will render them liable to those penalties."

In petitioning the court, lawyers for Mr. Marvin concluded the case was important because, "In view of increasing public demands for effective gun control laws which are being made across the country, the questions involved in this case will presumably arise with some frequency

as other states adopt similar laws. Other states, and the federal government, are likely to pass licensing and registration statutes. There will be a tendency to delegate broad powers to local administrative officers; there will be a tendency to provide only for summary procedures; there will be a tendency to disqualify potential licensees on grounds encroaching on legitimate associational and other Fifth Amendment freedoms. Other governmental units and citizens are entitled to know what limits, in the interest of due process and the First Amendment, government must honor as it pursues its undoubtedly proper function of controlling use and possession of firearms. It would therefore be timely for this Court to issue a Writ of Certiorari in this early case in order to settle the important federal questions which it presents." These were the words of the petitioning lawyers and not of the Court. By rejecting the petition this thinking was also rejected.

Three points of law were presented: (1) whether the New Jersey Gun Control Law which requires an answer to question No. 22, violates the First and Fourteenth Amendments; (2) whether the New Jersey Gun Control Law is vague and overbroad in violation of the due process clause of the Fourteenth Amendment; and (3) whether the New Jersey Gun Control Law violates the due process clause of the Fourteenth Amendment because it provides no standards or procedure for determining when an application is to be granted or denied.

Still not settled is the question of how broad are the powers given officials under the law. The U. S. Supreme Court has only approved its being broad enough to require a man to say if he is "anti-" the American way of life. If the Court had agreed to review the case and found that the State of New Jersey had overstepped its constitutional powers, only question 22 of the application would have been affected.





(Continued from page 10)

such fire-formed cases will then enable you to have forming dies made to do the job more simply and quickly.

The same method can be applied whenever you can come up with *any* die or series of dies that will accept the basic case and shift the shoulder and change the neck diameter. It's too much trouble to make many cases, but will do to turn out a few.

• • •

For over 25 years, I've loaded shotshells for assorted sixguns. They come in handy for perforating varmints such as inhospitable Diamond-back rattlers and for potting small game for the skillet. And, of course, there are times when you can use shot at a breakable target and casually overlook mentioning that fact. 'Tain't your fault if the natives think you were using ball and applaud loudly.

The average sixgun cartridge case simply won't hold enough shot for a really effective load. You can rework rifle-caliber brass to make cylinder-length cases that will hold as much as ½-ounce of shot in .44 and .45 caliber, but it's a hell of a lot of work. And, such cases are often difficult to extract after firing. I have several special dies made for me by RCBS for this sort of work, but the Shotcaps now being sold by REMCO (1404 Whitesboro, Utica, New York, 13502) achieve the same large shot capacity when loaded in standard cases by standard dies.

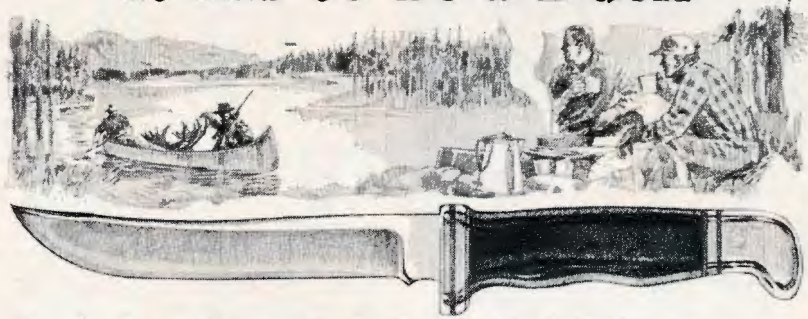
Shotcaps are simply clear plastic cylinders into which have been sealed proper charges of #9 shot. The container extends beyond the case mouth to give extra capacity, and is also formed at its base to function as a gas seal, eliminating the need for wads. When fired, the container separates from the shot charge shortly after leaving the muzzle. Years ago, our major ammunition makers used paper containers of the same sort for rifle and handgun shot loads being fully aware that standard cases didn't have enough capacity to be effective.

Shotcaps are loaded quite simply. They are seated directly over the powder charge and crimped in the case just like a bullet. Only standard reloading dies are required for the job, though the seating stem must be backed out to seat the cylindrical container to standard-loaded cartridge length. A moderate crimp should be applied.

Shotcaps are available in .38 (also suitable for .357 Mag.), .44, and .45 calibers. In the latter, a short version for the .45ACP is offered, containing only 150 grains of shot because of magazine size limitations. The .45 Colt

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version holds 270 grains of shot; the .44, 250 grains; the .38, 156 grains.

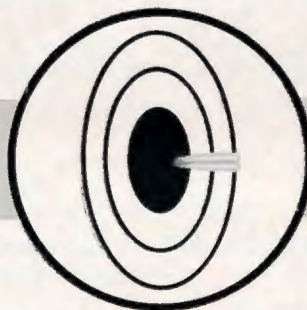
When shooting a 4" Colt Python .357 Magnum we obtained considerably better patterns than with maximum charges of shot loaded directly into the standard case. The plastic container isolates the shot from the rifling in the barrel, preventing the massive deformation that occurs when naked shot is driven down the bore. It functions just as do the plastic shot cups used in modern shotshells. This makes a lot more sense than forming special cases or trying to work up effective loads in short standard cases.

• • •

If you own a Lee Loader, you'll be interested in looking at some of the new

accessories that are now available for use with it. The simple primer pocket cleaner is of scraper type and sells for less than half a buck. The case trimmer consists of a shell holder, lock stud, cutter, and guide pin. The latter serves as a combination cutter stop and length gauge when the unit is assembled. When it contacts the inside of the case head, it prevents the cutter from removing any further metal. Operation is purely by hand, of course, and output is, therefore, slow. The price for all 4 pieces is just \$2.95. After trimming, there is the Lee Chamfering Tool to remove burrs from the case mouth. It costs just under a buck and will work on nearly all standard caliber cases.

It's first-drink time, so I'm heading for the barn.



## POINT BLANK

By COL. CHARLES ASKINS

A Canadian named Jerry Knapp, a biology student at Williams University, Montreal, says that the duck hunters who shoot and miss are killing more ducks than their more expert brethren. Seems, according to Jerry, that the shot pellets fall into the marsh and later flightings come along and gobble up the shot and presto they all develop cirrhosis of the liver. Or its equivalent.

Knapp estimates that 4% of the ducks in the Mississippi flyway and 3% of all the waterfowl in North America die of lead poisoning.

It has been seriously suggested that a most wholesome substitute for lead which is poisonous is a pellet of gold. It seems that in tests run by the biologists, they have found that an old greenhead can digest 17-carat nuggets minted to No 6 size without any disturbance to his gizzard whatever. Jerry Knapp points out quite sensibly that there would probably be objections on the part of the shotshell makers, the folks down at Ft Knox who keep our dwindling supply, along with the sports who buy the shotgun fodder if a turn was made to this more digestible type of pellet.

Even when the shot pellet isn't made of gold it is still the single most

expensive component in the cartridge. Winchester-Western has been experimenting with iron for the shot. Not only because it will not sicken wildfowl but because of its cheapness.

You may wonder why iron shot has not been used long before this. Some factors loom so large it has never been seriously considered. While the iron pellet will not give the mallard a stomach ache, it will not perform ballistically for sour apples. The iron pellet is not as heavy as the leaden one and too, it is too hard and unyielding. The modulus of rigidity of lead runs approximately a million pounds per square inch while that of iron is ten million psi. The modulus of rigidity, let it be explained, is the ability of the metal to resist deformation due to compression. That of iron is altogether too high.

Despite these apparent shortcomings the W-W outfit has given iron a whirl. They like what they have found. The tests are a sort of joint study between the ammo company and the Mississippi Flyway Council. The latter is a game restoration group that is quite concerned over the losses of web-feet due to scooping too many pellets off the bottom of ponds and marshes.



Because iron is lighter than lead it is necessary to remove some of the wadding and thus make up in numbers of pellets what is lacking in weight. This was done during the Winchester-Western tests. Because again, the iron is lighter, it sheds velocity more rapidly than the leaden pellet and thus is limited in range. However up to 40 yards the experimenters were happy with the kill effect.

The biologists who did the shooting say, "From what we have seen iron pellets appear to be surprisingly effective. Flying mallards were shot each test day at widely varying ranges. The range of the shot was recorded and the duck was later fluoroscoped. Kills with iron shot ranged up to 40 yards. Ducks that were centered in the shot cloud were cleanly killed at all ranges. We noted few cripples or ragged kills. Many iron pellets passed completely through the big mallards with no deformation. Some birds were hit with as many as 9 pellets and all completely penetrated the game."

The shells used with the leaden pellets were loaded with No 4 shot. The iron pellets were larger, size # 2. This was necessary to get a comparable pellet weight in the two charges. Probably the most serious drawback was that the iron shot scored the gun-bore and even when the polyethylene wrapper was used about the load it still marked the barrel.

Tests have gone on for many years to find some substitute for the costly lead which goes into the shotshell. DuPont, the powder makers, once ran a series of tests using ordinary soft shot, chilled shot, silver-plated, copper-plated and steel ball bearings. While the copper plated shot (a leaden core with copper electroplated over the surfaces) patterned 75% at 40 yards the steel ball bearings did very poorly. Only 39%. Iron, had it been tested would have done a bit better but not much.

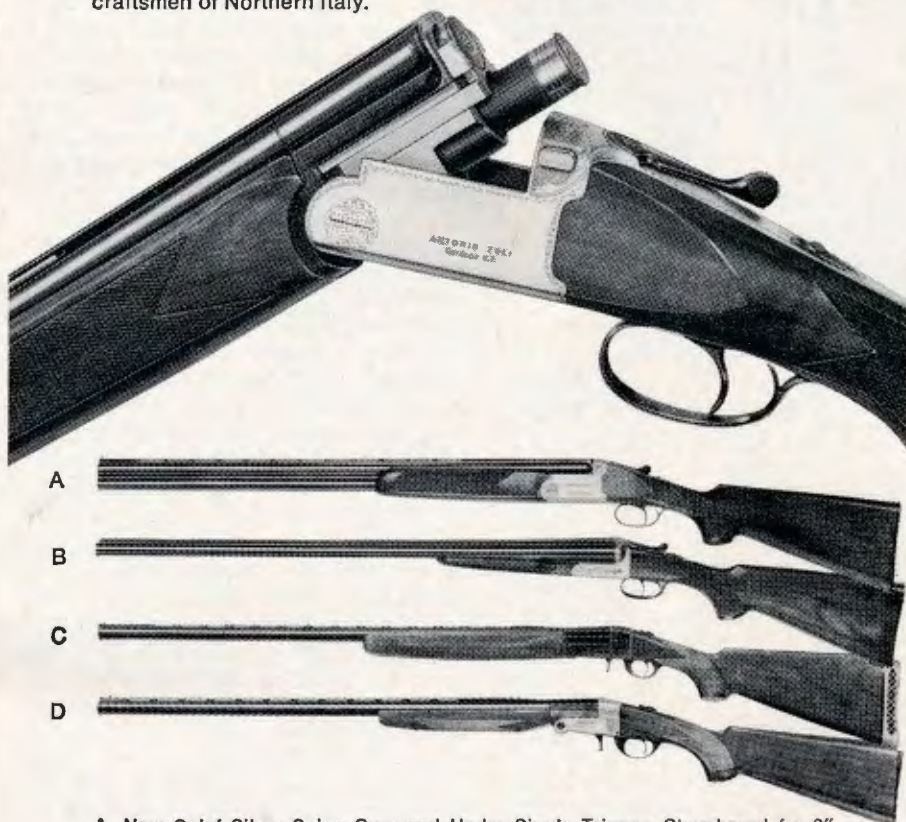
The tests indicated the rigidity of the different metals has a lot to do with performance. The poor showing of the steel bearings shows that increasing the hardness and rigidity has a definite limit. The coated shot, both the copper-plated and silver-plated, on the other hand indicates that the rigidity of the envelope with its elastic inner core of lead does improve the patterning performance. Today one of the best performers of all shot pellets is one that is coated with nickel.

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Marksmanship Training Unit) at Ft Benning, Ga, is probably the most efficient unit in the military today. During its dozen years of existence this platoon-size handful has garnered more topdrawer championships than the entire Army can claim since the century began.

Created by the Continental Army Command during March, 1956, the AMTU was created to further competitive marksmanship and provide team members to represent the United States in international competition. It also has the responsibility for assisting with the small arms firing school at the National Matches, Camp Perry. After the nationals every year members break down into a series of teams and go all over the United States putting on shooting clinics. This is an extremely valuable adjunct to their main job of winning matches.

What isn't generally known and a facet of the unit which to my notion is almost as important as the training efforts of the MTU members, are the efforts of a little team of armorers who work in the shop at Benning. These buckos tune up the rifles and pistols, and shotguns as well, of the shooters. These tuneup jobs are in the nature of major overhaul, with changes, innovations and improvements added by the technicians. What they have done and what they have learned has contributed measurably to our successes in the Olympics and the World Matches.

When it became obvious to the Air Force that the thinking behind the formation of the AMTU was sound the flyboys got busy and put together their own version. They called their unit the Air Force School of Marksmanship. This was fairly simple to organize but what was not so easy was to recruit a coterie of gunsmiths who could pour all the points into the service rifle and pistol so that the owner could win. When the Army heard the Air Force had set up its own marksmanship unit they sent an invitation to Lackland Air Force Base to send over their gunsmiths and they'd teach them all they knew. This was done and apparently the job was a success for the Air Force has been giving both the Army and the Marines a great deal of trouble ever since.

During the years it has been in existence the AMTU has produced some real ringtailed roarers as shooting men. Probably none more outstanding than the remarkable SFC Bill Blankenship. He has been the perennial pistol champion of the country for countless times. Then there is Lt. Gary Anderson who while no longer with the unit got his training there. He is

the Olympic free rifle champion, a title first won in 1964 at Tokyo and successfully defended at the '68 Olympiad in Mexico.

• • •

There was once a time when a fellow could catch up his fowling piece, whistle up his potlicker, and hie him away to the edges of the village and there commence his game questing. But that was yesterday. These times you must stack the musket in the auto and drive sixty miles through suburbia to get to the shooting grounds.

This necessitates some kind of a case for the ordnance. Most shooters resolve this one pretty quickly by the purchase of a soft plastic cover. These full length cases are okay for light service only. If you expose them to the rigors of air travel, commercial air that is, the shooting iron is apt to arrive at the shooting grounds in need of 4th echelon overhaul.

Before the current rash of airlines hijackings you could board any commercial flight with the hunting arm over your shoulder if it was encased in some kind of gun case. Once in your seat the rifle could be shoved underneath and it rode fine. But not anymore! Now the airline insists that you toss your four-hundred-dollar Weatherby in with the suitcases. If it gets on the bottom of the pile and there is a quarter-ton of baggage on top, that's just tough.

The answer to this one is an entirely new king of gun case. It is a hardback. Lined with polyurethane, a kind of synthetic sponge. The outer shell is a heavy duty high-impact styrene and will withstand all the abuse the baggage smashers can deal out. If your gun gets on the bottom of the luggage pile you need have no worries. Maybe the best part of the story is that these new all-plastic cases are quite light in weight. Once, on my way to Africa and a longish safari, I had made a special 4-gun all-aluminum chest. It survived innumerable trips to the Dark Continent after that. I have since abandoned it for the newer offering. It is simply too heavy and when you are flying every one of those pounds can be costly.

While the new breed of gun case is okay there are some warnings about them. Do not store a firearm in the case for long periods. Once after an African hunt, I dropped off a brand new 7 mm magnum in one of the new plastic boxes for subsequent shipment home by water. It was stored in Nairobi during the dry season, a time when temperatures went to 100 degrees during the day and dropped into the sixties at night. When my rifle got



home it was badly rusted. The polyurethane lining had soaked up moisture from the temperature variations and had thus pitted my rifle.

Good leather makes excellent gun cases. For almost any kind of a soiree short of the commercial plane junket it is splendid. The leather case should be full length and it wants to be made of heaviest skirting stock. Skirting leather comes right out of the very middle of the bull hide. It is as heavy as shoe soles. A rifle thus encased is properly protected. Sheepskin cases, and those cases lined with wool or other padding, are pretty sorry. Most of them including the sheepskin will collect moisture. A good case needs no lining.

A leather case for the rifle should be full length and have a flap at the butt end to close it. It needs a carrying handle and also a carry strap, an adjustable sling to pass over the shoulder.

Some fellows collect guns but I collect leather. Scabbards, cases, holsters and belts. I can droll over a fetchingly executed piece of leather carving, getting all the pleasure from its beauty that I do from admiring one of Fajen's finer gunstocks. I own a hundred and fifty shooting irons and not less than that many pieces of leather. Every gun deserves its proper case.

• • •

How much cleaning does the modern firearm need with its modern ammo to keep it bright and shining? Precious little, believe me. These days a surprisingly large number of scatterguns have aluminum receivers. It is pretty difficult to get a rust job on this stuff. Many barrels, too, are now chromium plated inside. Chrome, like aluminum, is immune to rusting. Foreign shotguns are more apt to be plated with the bluish-white metal than are the local product. More's the pity.

It used to be we swabbed a shooting iron from stem to stern and hurried out the cleaning rod and the patches the moment we came off the range. That was in the time of mercuric primers and cupro-nickel bullets and you had to be quick or else run the risk of damaging the bore. Those were the days when sperm oil was considered the only preservative and Hoppe's No. 9 was in every rifle cabinet.

There were some weird remedies for the corrosive mercuric priming ash that was left in the bore after shooting. Boiling water would tame the action of the residue if it was applied promptly. It was a neat trick to pour a gallon or so of the hot liquid

through the barrel and not drain a cupfull into the action!

As for the cupro-nickel jacketing which would strip off the bullets leaving lumpy deposits in the bore, this was doctored by a solution of stronger ammonia. Now stronger ammonia is the stuff they stick under the nose of these poor mortals who elect to fall over in a dead faint. A whiff or two from the uncorked bottle is guaranteed to fetch them around in jig time! The poor benighted rifleman who had to soak patch after patch in stronger ammonia to free his rifle of its cupro-nickel fouling really had all his sinus opened up, I'll tell you!

Today virtually all our bullets are made of a jacketing which is a composition of 90% copper and 10% zinc. It is practically free of bore deposits. It is called gilding metal and besides leaving precious little residue in the barrel it tends to polish the bore and after some firing the gun will shoot more accurately than when new.

Since those ancient days when the reluctant sperm whale gave up its valuable oils for gun preservatives we have come a long way. Now we have super lubes which the petroleum people like to call "fingerprint" oils. These latest lubricants tend to neutralize the acids left by human hands and also have some little ability to pick up moisture left from the handling. The only fault with them is that they tend to evaporate all too soon. Even the best of them will show a tendency to leave a gummy residue. This is especially true of animal and vegetable oils and to some extent mineral oils also have this fault. A peculiarity of mineral oils, most objectionable, is that some of these tend to "varnish" leaving a surface that is anything but slick working. Graphite is best on moving surfaces, as for example, in the action and it is completely immune to extremes of heat and cold. Of all the lubricants it is by a margin the best.

Graphite won't give any protection from the elements. It is sometimes found as an additive to gun grease and then the user has a very nearly ideal combination. He achieves the necessary lubrication and has protection too.

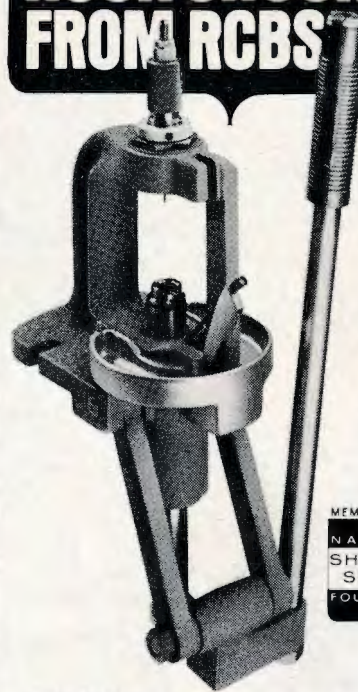
In the Arctic the sportsman has it made. The firearm functions best without absolutely anything in lubrication or cleaner. Neither oils nor greases. Our troopers in Vietnam are in the worst possible weather condition so far as weapons go. It rains during the monsoon season in the highlands of interior Vietnam some 300 inches. Try keeping oil in the bore and grease on the outer surfaces in weather like that!



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# REBUTTAL

## SHAME ON YOU MR. CARMICHEL



The following is admittedly, a purist's reply to the idea of the modern design muzzle-loading rifles described in the April, 1969 issue of GUNS Magazine "Modern Muzzle Loaders by Jim Carmichel." The author of this rebuttal is MR. JAMES D. BAIRD.

**M**UZZLE LOADERS Shoot Old Rifles, Wear Colorful Garb," reads the lead to the newspaper story. The reporter's amusement had been tempered with interest, as he moved through the colorful group, gathering information for his newspaper. The scene was Cody Park, in North Platte, Nebraska, and as part of the annual Nebraskaland Days celebration, a two-day muzzle loading rifle shoot had been arranged. Shooters from a dozen states were on hand, dressed in the best frontier fashion, and equipped with muzzle loading rifles of every description.

Perhaps once a year these shooters could take their rifles to the woods after game such as deer or bear. The remainder of the year they must content themselves with such gatherings as these, where they can shoot their rifles in competition for trophies and medals, and bask in the fellowship and good will of like minded people. Doctors, lawyers, brick layers, carpenters, teachers, railroaders; people from every walk of life, but each with a common denominator. They all have a profound love, and respect, for the rifles of our forebearers. Virtually every one present could quote chapter and verse of the histories connected with his

home state, and in many cases, the histories of a good many of the other states as well.

To love a muzzle loader, one is more than a shooter; he is also a historian. He lives his history, in his attempts to reproduce that history's guns, its clothing, and its traditions. If a muzzle loader enthusiast may seem a bit eccentric, at least he is not alone. Several times a year the hills bordering the valley of Laughery Creek, near Friendship, in southern Indiana, echo to the roar of black powder guns, the laughter and song, the music and dancing of these enthusiasts as they attend the shoots held by the National Muzzle Loading Rifle Association. Tents, tipis, campers and trailers throng the large camping areas, and a commercial row is filled with the booths of those dealers who supply the needs of these black powder shooters.

Every form of rifle shooting, from offhand at twenty five yards with a flintlock squirrel rifle, to three hundred yard matches between heavy bench rifles is to be found. With a covered firing line nearly a quarter of a mile in length, there is room for a great number of shooters in each relay, yet every bench is often filled. A pistol range is busy with



shooters, using cap and ball revolvers, single shot Kentucky pistols, and every other form of muzzle loading hand gun to be imagined. It is here that the emphasis is on accuracy, rather than authenticity, and some ultra modern shaped pistols are to be seen along side of a fine replica of a Model 1805 Harper's Ferry.

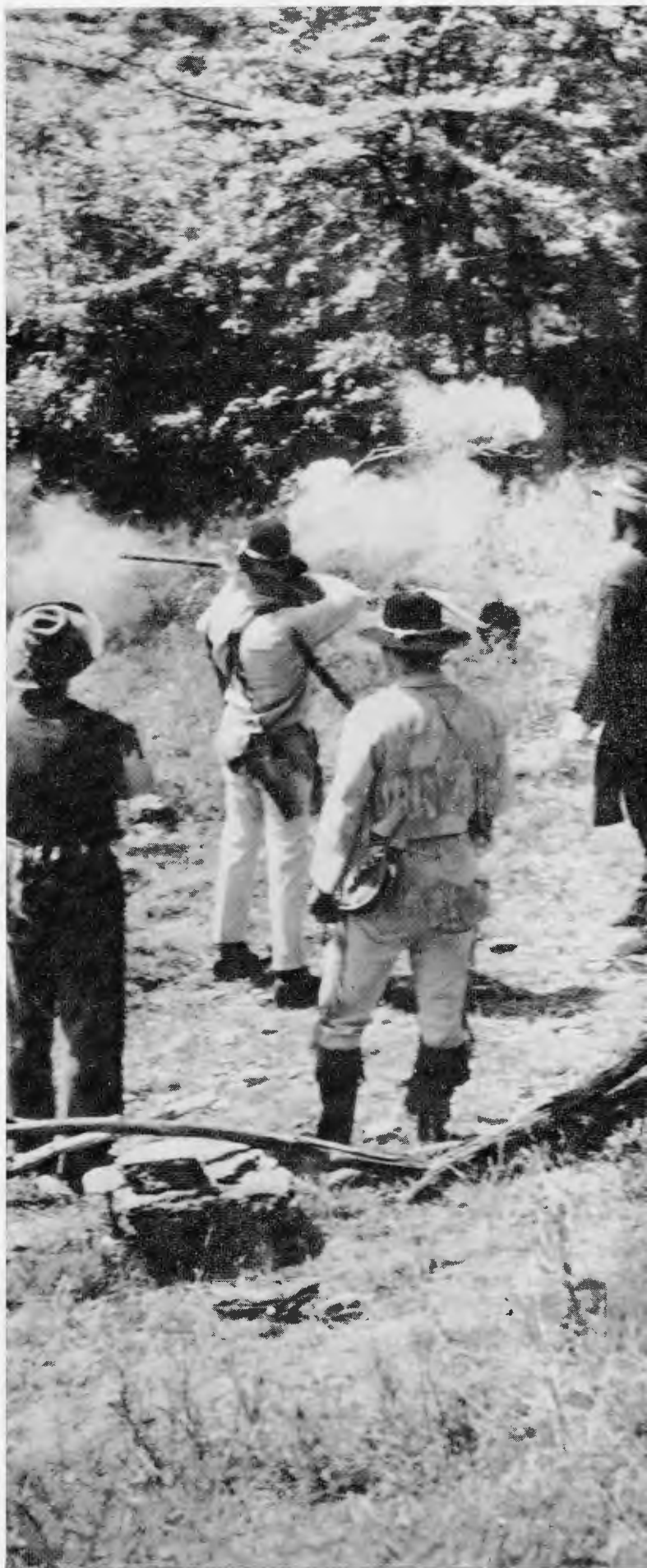
Across the creek lies the Primitive range, where the emphasis is placed on authenticity. In these matches the participants pit their skills in shooting, knife and tomahawk throwing, and other skills of the early pioneers. The rapid growth of these Primitive Matches are a good indication of the number of muzzle loading enthusiasts who feel the old ways are best. One match, called the Hawken Shoot, requires the contestant to fire three shots offhand, and two shot from a rest, at an eight inch bull from a distance of one hundred and thirty yards. The rifle must be at least .45 caliber, and be equipped with open sights. No practice shots, or spotting with a scope is allowed. Even under these conditions, two inch groups are not uncommon.

A trap range is served with flood lights, so that the shooting can continue after dark each night, in order to accomodate all of the shooters who wish to enter the trap program. In addition, the shotgunners have a scenic quail walk, where targets are thrown in random directions, and from surprising positions.

Beads, buckskins, percussion caps, flints, knives, guns, powder, books, stock blanks, rifle barrels and hardware; nearly every need can be filled from the shelves of those dealers on Commercial Row. Book dealers stock their shelves with books on how to build a muzzle loading rifle, or how to build a tipi, cook over an open fire, do bead work; books on a myriad of things related to this fascinating sport of muzzle loading. Books on early history, Pennsylvania, Ohio, Kentucky and Tennessee, the fur trade, St. Louis and Hawken rifles. Every book in print that offers a bit of information about those days when the muzzle loading rifle was supreme.

Thousands upon thousands of muzzle loader fans scattered across this great country, with their numbers constantly increasing, can often influence the legislatures of their respective states. Witness the number of states that have established special deer seasons in which only muzzle loading guns can be used to take a deer. The primary reason for such a season is to make it possible for the muzzle loading enthusiast to hunt deer in the same manner employed by his forefathers, thereby allowing this generation to relive some of those precious moments. Hours and hours of practice are spent with the rifle, and each day left before the opening of the season is marked off with anticipation.

Probably it is inevitable that in this day of commercialization and fast buck ideology, some one would attempt to make a mockery of the muzzle loading traditions. In the April, 1969, issue of GUNS, there appeared an article entitled "Modern Muzzle Loaders" by Jim Carmichel. The article describes rifles being made by a firm in Tennessee that are purported to be the answer to a growing need. In stating the case for such rifles, the author said, "Actually, in recent years, there has come about a rather urgent demand in some areas for a muzzle loading rifle which incorporates the features of the modern rifle. In Tennessee, for example, as in some other states, there is a special deer hunt sponsored by the Tennessee Game and Fish Commission for muzzle loading rifles only. Many otherwise competent hunters have found that they simply cannot







At the NMLRA Walter Cline Range (above) participants eat as of old as well as shoot according to tradition.



handle the unwieldy traditional style rifle under actual hunting conditions and complain of accidental discharges, lost game and inability to raise and aim the longer rifles. Others, even those accustomed to firing the Kentucky rifle, have encountered conditions in the rugged Tennessee mountains where the dense undergrowth actually made it impossible to fire or even pass through. Other hunters expressed a reluctance to expose their valuable and delicate antique rifles to the rigors of deer hunting. Clearly what was needed was a light, short rifle which would be tough enough to stand hard use, quick to aim and fire, *and still meet the specified requirements of a true muzzle loading rifle.*" (Italics mine) Who does he think he's kidding?

The muzzle loading hunters who worked, wrote letters, gathered support, and finally, and successfully presented their case before the Fish and Game Commissions of their respective states, in order to obtain a special season for muzzle loaders, could not have envisioned such a travesty of their efforts. Those who would complain of the unwieldiness of long guns could not know anything of the heroic deeds of such giants in history as Boone, Kenton, Findley Colter, Clyman, Bridger and a host of others. They found it possible to hunt in such conditions. They not only hunted under such conditions, and did it successfully, but at the same time eluded Indians happily bent on lifting their scalps. In a day when game trails were the only roads, these men carried these same long guns hundreds and even thousands of miles from civilization, afoot and on horseback, in canoe or pirogue. Any necessary modifications to improve these rifles were made long before Tennessee started producing hunters who now claim to need such a monstrosity as described in Mr. Carmichel's article.

The Hawken brothers of St. Louis modified the long Pennsylvania rifles that were being carried to the Rocky Mountains by the beaver trappers. By 1825, they had developed a short, powerful rifle fully suitable for use far from any source of repair or supply. The Hawken "Rocky Mountain Rifle" came to be known as the *ne-plus ultra* of all muzzle loading guns for such use. But even as good as the Hawken was, there were still thousands of eastern made rifles, both flint and percussion, used in the quest for western beaver streams.

The one firearms improvement that improved upon the Hawken rifle was the introduction of fixed cartridges that were loaded from the breech. Breechloading firearms gave the hunter the ability to fire and reload faster than ever before. Such an advantage was of immense importance when the target was often a horde of screeching savages bent on taking horses, furs and scalps from the unlucky hunter.

Due to the use of copper for cartridge casings, the early breechloaders were limited in power and range, so they did not completely eclipse the muzzle loaders. For sustained fire at close range, the breech loader served admirably, but for big, tough game at long ranges, the heavy muzzle loading rifle still reigned supreme. It was not until the mid 1870's that any breech loader was developed that was capable of out performing the muzzle loading rifle in power or range. Shortly thereafter, the muzzle loading rifle became obsolete—to remain in limbo until revived by the muzzle loading fraternity of the last thirty years or so. The growing popularity of this sport is due to an interest in the history of such arms, more so than with any "... fascination of pouring a charge of powder down the barrel and ramming home a lead ball." (Continued on page 52)





Photo at left shows sights (through right eye) placed in front of deer. When right eye is closed and left eye opened, rifle appears to jump to the right.

# A SIMPLE METHOD OF RANGE ESTIMATION

**Based on an old military system, this could be the answer to a successful hunt**

By ROBERT SINGHAUS

**H**AVE YOU EVER been tempted to swap your rifle for a yo-yo after missing that "easy" shot at the biggest buck of the season? No doubt most of us shoot better on the target range than we do in the field, and one reason—aside from the natural excitement of finding game—is that many hunters just can't estimate distances accurately.

Oh sure, you probably think this applies to the other guy, but do you know

how many factors can cause you to goof in estimating distance?

That big buck will seem farther away than he actually is if: 1. The color of the background is such that he blends with it. 2. He is standing at the end of a long avenue, such as a fire-break cut through timber. 3. You are looking at him across rolling ground. 4. The light is poor.

On the other hand, he will appear

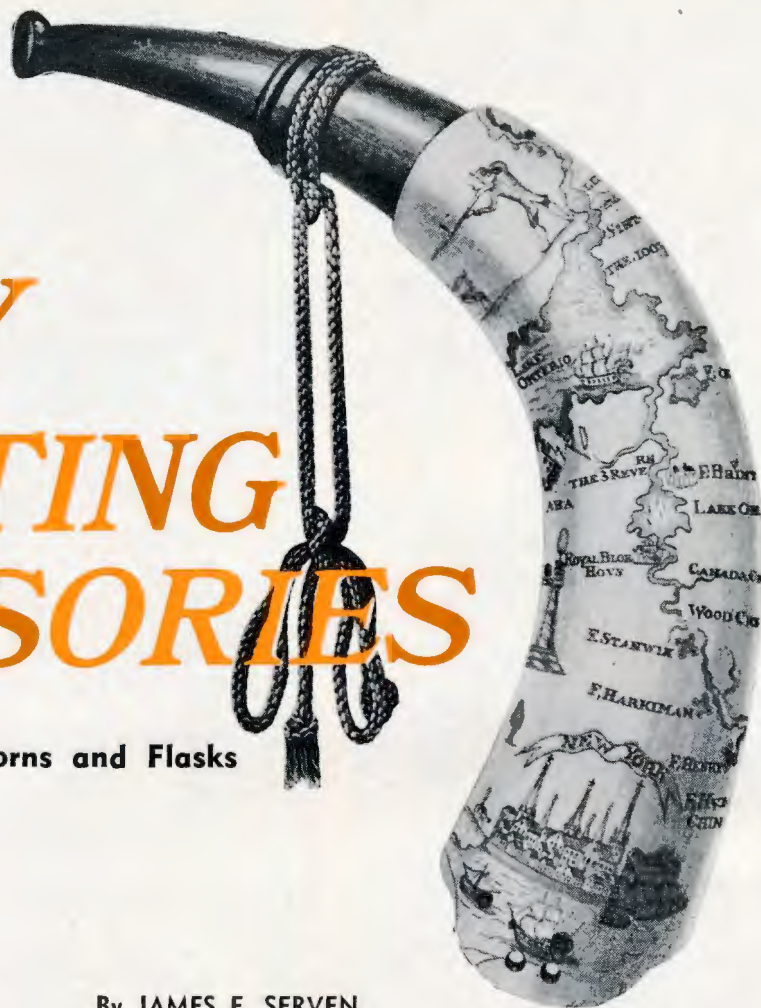
closer than he really is when: 1. There is a bright light shining on him. 2. The air is exceptionally clear, as it is in the Western mountains or deserts. 3. You are looking up or down hill. 4. Looking across a flat, bright surface.

Do you still think you're an expert at estimating distances? Well, you can be, and it's easy. All you have to do is make a couple of measurements, apply a little ele- (Continued on page 71)



# EARLY SHOOTING ACCESSORIES

## PART 1 Powder Horns and Flasks



By JAMES E. SERVEN



**G**UNPOWDER is the driving force of a firearm. It is also a sensitive and explosive compound that must be handled with extreme care. This lesson was learned early by gunmakers and as much precaution was given to the methods of carrying gunpowder as in making the gun safe to explode it.

Down the years powder horns, flasks and other containers for carrying gunpowder have been produced in many sizes and shapes. They have been made of many different materials and in a great variety of mechanical, structural or decorative designs. The primary functions were to keep the powder dry, protect it from accidental explosion and make it easily available for prompt loading of the rifle, shotgun or pistol in the field.

In the early centuries of European gunmaking, firearms were available only to persons of wealth and high rank. Their guns were finished in very ornate style and the powder horns were fashioned accordingly in elaborately carved staghorn or other materials. Not only do you find figures of men or animals and traditional scrolls but from Central Europe you will also occasionally find some carved or etched horns that portray humorous or even sexy subjects.

Jacob De Gheyn pictured powder horns in his drawings as early as 1608 and through subsequent years various powder containing accessories have appeared regularly in illustrated



Facing page: Map horns are prized by collectors and tell much about the early history of our country.

Left: Many powder containers for early matchlocks and wheel-locks were masterpieces of carving art.

Below: St. George and the dragon are a part of the handsome carving on this early powder horn of ivory.



works devoted to the field of historical firearms.

Horn was one of the most practical materials in which to store powder. It was a tough, cartilaginous material, easily and cheaply obtained; it was light, could be made waterproof and would float. Horn would melt before it would burn and it gave off no spark. Moderately elastic and capable of standing hard usage, horn was resistant to decay and would not splinter or shatter easily.

Although horn appears to have been the predominant material used abroad during the early centuries of firearms, bone, ivory, metals, wood, glass, tortoise shell and even hardened leather were also employed as powder containers.

The interest of Americans quite naturally is greatest in the horns and flasks used by our own countrymen. Here the cow horn was the most practical powder container for the pioneer settlers. The tapered shape formed a natural funnel for pouring and the graceful curve of the horn conformed to the contour of the body for carrying.

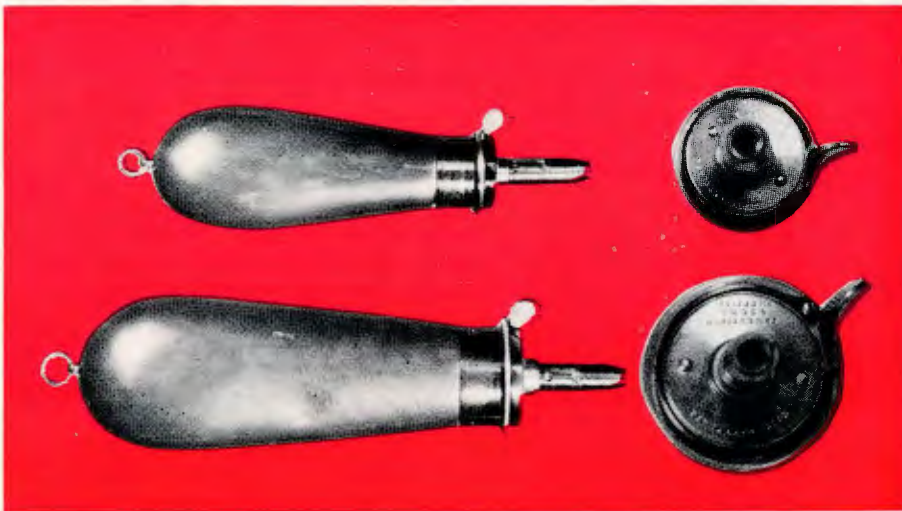
It required no particular skill to make a plain powder horn and they are relatively easy to find in collections today. Etched and map horns, however, are a very different story. The French and Indian War of the 1755-1763 period

appears to have produced some of the finest surviving map horns. Primarily etched by soldiers with a jackknife and a needle on a stick (for fine lines), horns of this nature have provided major contributions to the early history of our country. As an illustration, the 1777 map horn of Stephen Avery was the first drawn map of Providence, Rhode Island. Gid Stanley's horn recorded: "Stony Point was taken July 16, 1779. I know for I was there." One horn, reflecting the rising animosity toward England in the 1770s, was inscribed: "I powder with my brother ball will smite the British one and all." Today authentic map and inscribed horns of the 1700s and early 1800s bring high prices on the collector market.

There have been some very outstanding publications devoted to American powder horns. One of the first was published in London by Fred W. Lucas in 1841 and is titled *Appendiculae Historicae or Shreds of History Hung on a Horn*. In 1900 Gilbert Thompson published an interesting monograph which he called *Historical Military Powder Horns*.

Stephen V. Grancsay, Curator of Arms and Armor at the Metropolitan Museum of Art in New York City, gave us in 1945 *American Engraved Powder Horns*. This large





James Dixon & Sons made these bag-type flasks for Colt's pocket and Navy type pistols. Tops were marked with maker's name and Colt model.



George Washington, raised pistol, and entwined Dolph pistol flasks.

book is intelligently illustrated and the work of a very well-informed and highly respected author. It has been aptly stated that powder horns helped to shape history and the map horn also helped to record it.

As our nation progressed into the 1800s, changes in the design and ignition of firearms took place. Keeping pace with these changes, powder containers also took on a new look. Copper and brass flasks began to replace horn, and decorative pressed-in designs made them attractive to the eye as well as efficient. They were light and generally smaller than the curved cow horns, although it must be said that they were not as resistant to hard usage. In passing from horns to metal flasks it may

be noted that storage of gun powder, usually in wooden casks, was also sometimes stored in extra large ox horns.

Metal powder flasks were among the most useful and decorative of firearms accessories. Soft, easily formed copper and brass lent themselves to uniform quantity production. An important improvement over horns was an automatic cutoff and adjustable charger (spout) for the top of the flask.

The body of metal flasks was almost always made in two parts, each side pressed into design or plain, as the case might be. The inside edges of the halves were tinned and the body sweated together, forming tight seams.

In simplest form the top was a cir-

cular collar that slipped over the neck of the flask and was held in place by three small screws. It was closed at the top by a circular disk soldered into place and into which was screwed a fixed or a graduated charger tube. The top was also fitted with a spring-activated thumb piece which controlled a cutoff attached under the circular top and at the base of the hole for the charger tube.

Numerous improvements were made and patents granted for flask tops. There came the top which could be unscrewed from the neck band for easier filling, the adjustable telescoping charger, a plunger type charger, a transverse plunger and a pivoted swinging spout. Flasks made for Colt pistols had

Among the rarest flasks are those made for the Colt's Paterson pistols and rifles. From H. E. Green collection.







Right: Markings identify the four sporting and five military flasks.

five charging tubes at the top and a compartment to discharge five balls at the bottom. The flask for Colt Paterson rifles had eight charging tubes. Flasks provided for cased pairs of English or European pistols were usually small and frequently had a compartment in the flat base to hold extra flints or caps and balls.

The first of the metal flasks were imported from England and that country continued to be a major supplier after the wars were past history and normal trade relations had been resumed. Dixon, Hawksley and Sykes were the leading English manufacturers; the Dixon firm continues in business today. It was not long, however, before the (Continued on page 50)



Variety of flasks made of metal, camel skin and horn.



ONE OF THE GREAT American traditions is target shooting. As far as I know, this sport started with the first colonists way back around 1600. These early settlers shot crows with muzzle loaders and a single ball—try this some day. From that time on, Americans always considered themselves as Riflemen so that it is not surprising that they reacted violently when challenged by the Irish in 1873. The Irish had soundly trounced the finest marksmen that England and Scotland could put on the firing line. This appeared to make the Irish the top rifle shooters in the world and yet, as they surveyed the situation, they decided to challenge the Americans to a match and settle, once and for all, Irish rifle supremacy. In those days, American riflemen were too busy creating a new nation to bother to organize a formal rifle shooting club. However, in 1871, a small group of men formed the National Rifle Association. The Irish took a full page ad in a newspaper and, addressing the Riflemen of the United States, challenged them to a match. With their usual disregard for the finer facts of life, the Americans immediately commenced holding elimination matches to find out who should be on the American team. Fortunately, there were enough shooters, versed in the ways of the world, to realize that some one would have to put up the prize money because rifle shooting was a big business proposition and in addition to that some firm would have to produce rifles capable of giving match accuracy at all ranges up to one thousand yards.

As the shooters banged away, more hard headed men

went to work to raise money and provide rifles. Fortunately, both Remington and the Sharps Rifle Company stepped into the picture to furnish match rifles and prize money. The National Rifle Association agreed to handle the matches, and the arrangements were made so that September 26, 1874 was chosen as the date for the challenge matches that were to be held on the then-new Creedmoor Range on Long Island.

The Irish continued to use their superbly built and literally hand crafted muzzle loading rifles created for them by John Rigby of Dublin. The Americans finally obtained their match Remington rifles based on the time tested Remington Rolling Block action. This Remington Creedmoor rifle used a fine vernier rear peep sight, mounted on the tang, and a barrel that was octagonal for the full length of the fore-end and then finished off with a slight tapered round contour to the muzzle. These Remington Creedmoor rifles were breech loading arms using metallic cartridges.

To make a long story short, the Americans edged out the Irish by a pure fluke because one of the best shots on the Irish team fired one shot on the wrong target at 900 yards so that the final score was 934 to 931 showing how close that match was.

Anyway, the Americans did whip the Irish and the Creedmoor matches and rifles continued for many years. The rifles sold widely among riflemen and the popularity of the rolling block rifles was so great that the last rifle came off the Remington line around 1918.

The late Model 1901 rolling blocks earned fame south of

**DO IT YOURSELF**

## **CREEDMOOR ROLLING BLOCK**

By MASON WILLIAMS





the border and in many countries around the world in the popular military calibers. As time passed, these rifles fell into general disuse until not too long ago, they sold for the magnificent sum of ten dollars. True, the fine Creedmoor and the other target variations continued to be sought after by collectors but it was not until recently that demand just about wiped out the available stocks of regular production rolling block rifles. Today most of them are in private hands.

Once again, as America looks back to its past, the demand has grown for "shooting rifles" because collectors and men who appreciate fine rifles will seldom fire a good specimen and they are constantly on the look-out for any alternative.

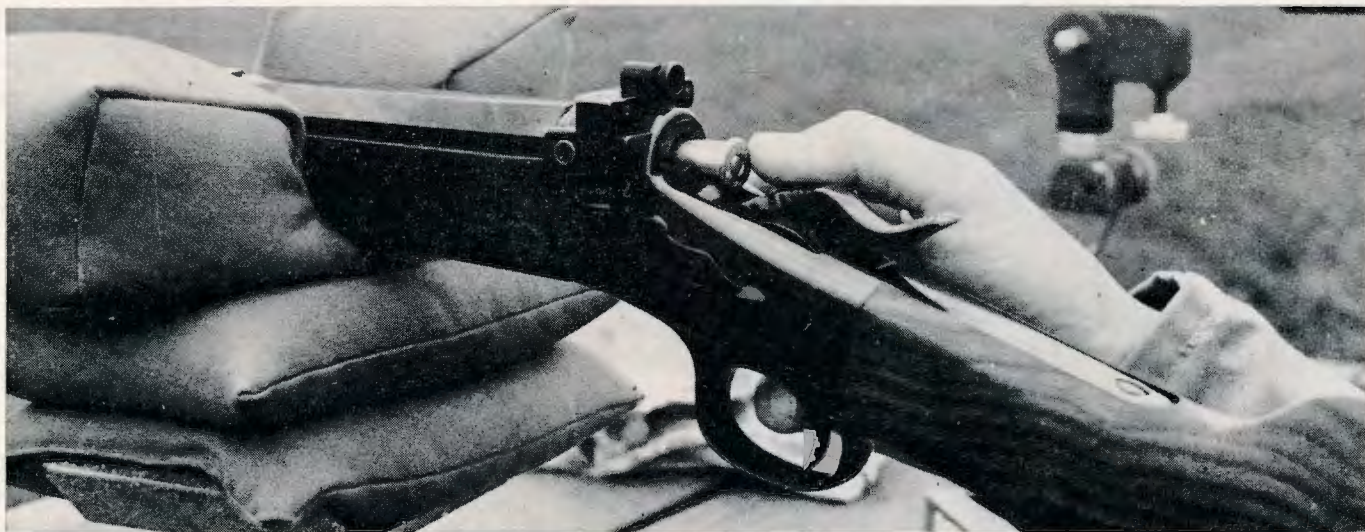
Numrich Arms had brought back the old Remington Buffalo rolling block rifle by means of conversion units and now Numrich Arms has gone even further to place a modern-day version of the Creedmoor rifle in the hands of shooters. The Creedmoor with its tradition and beauty can once again be fired day after day and used for hunting. I can personally vouch for the effectiveness of the .45-70 cartridge in the hunting fields in a single shot rifle. As for fun shooting, I know of no other phase of the shooting game that gives the shooter quite as much pure sport as lobbing the big .45-70 bullets down the range. Velocities are low and recoil is light.

This Numrich Arms Creedmoor rifle originated in the tool and die shop of Numrich Arms, West Hurley, New York. They *cannot supply the actions* because there are

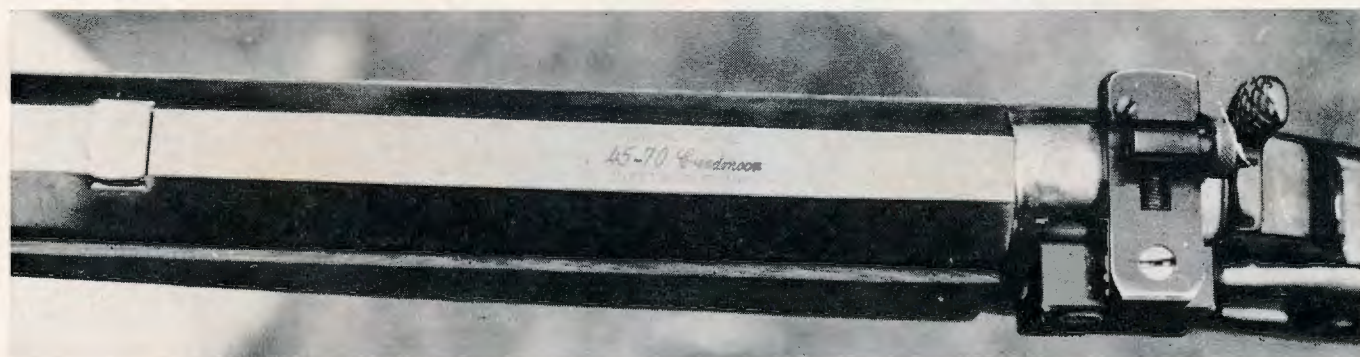
none left on the market but Numrich can furnish the stocks, the barrels, the sights and countless numbers of minor items to bring a shooting Creedmoor back onto the ranges. The Creedmoor barrels are basically half round, half octagon with the slab sided barrel section extending just beyond the fore-end then tapering off into a round barrel that has just enough sheer beauty to jerk any shooter's eye around as he passes the rifle. The balance of the rifle with this barrel is perfect; no other word can describe it. Numrich furnishes the barrel with a slot cut in it so that, if the shooter wishes, open sights may be installed right on the barrel. If not, then the shooter can obtain a barrel slot blank from Numrich and drive it in to fill the slot.

The Model 1901 action is the one that I recommend for this conversion to .45-70. Numrich makes the .444 barrel available, but being a traditionalist I much prefer the .45-70 which, even today, remains a cartridge to be reckoned with. The 1901 action was originally designed to handle the pressures and powders of the high velocity military cartridges and have the strength to cope with both the .45-70 and the .444 Marlin without difficulty. The rear of the Numrich barrels have been machined to fit most rolling block actions but due to minor variations in design it may be necessary for the shooter to let a gunsmith do the actual conversion work. This would, of course, include proof testing, headspacing and checking out the final completed rifle.

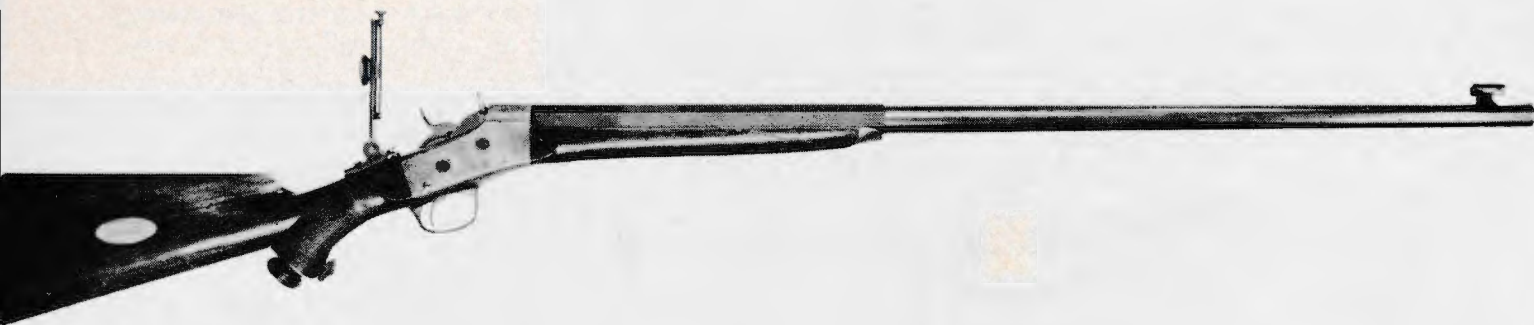
The variations in tang dimensions can often confuse the novice when he attempts to fit a Numrich stock to his action. Because of these variations, excess wood has been left



Left: The author shooting the Creedmoor from the prone position. Above: Bench-resting the .45-70 proved to be easy and fun. Below: Closeup of the octagonal barrel, its markings and the Williams Foolproof sight mounted on the receiver.







Above: An original Remington Rolling Block Creedmoor Match Rifle.



on all inletting so that in some, but not all cases, a correct fitting of metal to wood will require removing small amounts of wood in the cuts in the stock. Again, because of the variations, Numrich has not drilled stock screw holes which must precisely fit the holes in the tangs. While none of this is a large or complicated job, the novice would be wise to turn this work over to a gunsmith. He has the tools and know-how to do the work quickly and satisfactorily.

I turned over my action, Numrich barrel, fore-end and stock to Bob Reed, the well known Shokan, New York gunsmith and small parts man. Bob did a beautiful job for me on the rifle including the installation of a Williams Foolproof receiver sight plus polishing and bluing all the metal. The completed Creedmoor rifle weighs eleven pounds, has a 27" barrel and an over-all length of 44". The over-all length and resulting handling capabilities of these rolling block rifles are often overlooked by many shooters despite the fact that the hang of these rifles is excellent. Because gunsmithing prices vary considerably throughout the country I do not want to give a specific cost for doing the above work; rather I would prefer to state that a gunsmith should be able to do this conversion work plus polishing and bluing for around \$25 to \$40, depending, of course, upon the amount of work that he actually has to do on your particular rifle.

Many readers may wonder why I did not have a tang rear sight installed on my Creedmoor. Frankly, I had planned to have one put on to retain even further the original appearance of the traditional Creedmoor rifle, but these sights have just about disappeared. Collectors have been buying up these old, long, double-rail vernier sights and I could not find one. Modern-day tang sights are not constructed to be used on the Remington Rolling Block tangs and generally cannot be adjusted to bring the peep disc above the barrel level and if extensions are used the resulting sight is not strong enough to be practical. Because of this, Bob Reed and I settled for a receiver sight—the Williams Foolproof.

*(Continued on page 72)*

Left: Ronald Clermont and his target fired from Creedmoor position. Shot #1 was low. Adjusted sights for #2 and #3 and put four shots into one tight, little group. This target was shot at the 100 yard range.



**I**F YOUR shotgun shooting hasn't been up to par lately, it may be in the sights. Ordinarily we don't consider the little bead on the end of the barrel very important, and that is a mistake. It is a critical part of the shooting equation and despite its size has a big role to play. Shotguns are said to be pointed, and not aimed, but this is a generalization and is only partly true. I used to think that I did not pay much attention to the front bead, but I knocked it off one time on a duck hunt and immediately commenced to miss. I found I could not control my elevation, swing and lead was okay but that trifling hunk of metal had to be out there on the muzzle end so that I did not overshoot.

It may be the same way with your wing gunning if it has been a little on the sub-par side. Maybe the sights you have on your favorite smooth-bore aren't all they should be.

The sight or sights—some guns have two—do several things for the shooter. One of the most important is not to show him where to lead but to provide good elevation so that he does not shoot over his target nor under it. Another function is to keep him from cross-firing; that is looking down the rib or the barrel with the right eye but actually aiming with the left. Sights can also dampen cant, the unconscious habit of twisting the gun to the left or the right

when aim is taken. A gun canted to the left will shoot in that direction; one angled or leaned to the right will throw the shot charge out to that side. It is easy to cant an over-under shotgun, but a pair of sights coupled with a rib do a lot to stop this bad habit.

The ordinary pump repeater, autoloader, or plain old single-barrel single shot, have just one sight. It is on the end of the barrel and can be as far as 34 to 36 inches from the eye. There is a lot of space between the aiming eye and that bit of metal, and this big gap twists eye and sight has humps and jumps in it. The joint between the receiver and the barrel represents one bad gap, and the barrel is usually rounded and shiny on top and doesn't lend itself to a smooth easy aim. The double barrel side-by-side shotgun affords a better aim because there is always some sort of a low rib between the tubes and the eye naturally travels down this rib and finds the front sight.

Most practiced wingshots scarcely see the bead at all. They aim with the barrels and by the "hands-in-line" principle. If you ask them if they have seen the bead they will tell you they have not, at least they are not conscious of it. Others contend they do not even see the barrels but point the gun simply by looking intently at the winging target and then fetch the gun into a proper lead by the

# THE SHOTGUN SIGHT



*Charles Askins*

By **CHARLES ASKINS**







New Redfield 1x-4x Variable with special shotgun mounts for slug guns.

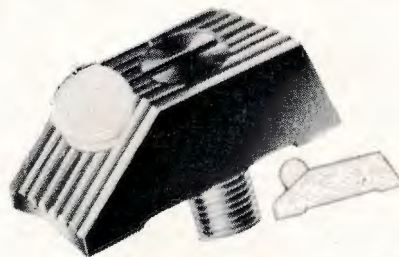
instinctive feel for it. This may be, and certainly on lots of shots, especially on close rising game like bobwhites, the gun is handled so fast there can be little time to seek out a small pipsqueak front bead and place it on the hurtling mark. For all that if the bead isn't there you'll find a lot of us in immediate trouble. All of which indicates that we have seen the bead subconsciously.

Bob Nichols, who a long time ago was firearms editor of "Field & Stream," had trouble with his skeet shooting. He wrapped a roll of white adhesive tape around his gun muzzle and this loomed up as big as a headlight. Bob said it helped him to both a better lead and more accurate elevation. From this beginning he finally perfected a front sight which he choose to call a "Bev-L-Blok" sight. It was a square of metal about  $\frac{5}{16}$ " in width, and into the angled back surface of this base, Nichols inset a big bead of ivory. This bead was  $\frac{1}{8}$ " or maybe a little bigger. With this arrangement he abandoned his "muzzle bandage" as he had dubbed his roll of adhesive tape. The big Nichols front sight is okay. It was adapted by the Poly Choke Co. to their variable chokes and is available today.

The front sight on our modern shotguns is usually  $\frac{1}{8}$ " in width and may be made of iron, brass, ivory or red plastic. If the gun has a rib on it there is usually a second bead about midway of the barrel and this is generally only half the size of the front. That is, it will run about  $\frac{1}{16}$ ". This second sight has a lot of worth. It will help to keep from cross-firing, that is looking down the rib with the right eye but aiming with the left. The front sight is low and inconspicuous and while it may be picked up by the aiming eye it isn't always too obvious.

There are a couple of front sights that are anything but inconspicuous; these are the Ithaca "Raybar" and the Simmons "Glow Worm." They are made of highly visible translucent plastic, bright red in color, and showing the shooter a bright spot about  $\frac{1}{8}$ " in diameter.

Along with these, Trius, the folks who make the handy

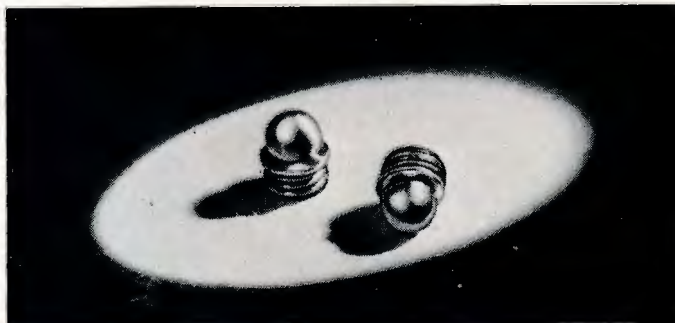


Bev-L-Blok front sight.

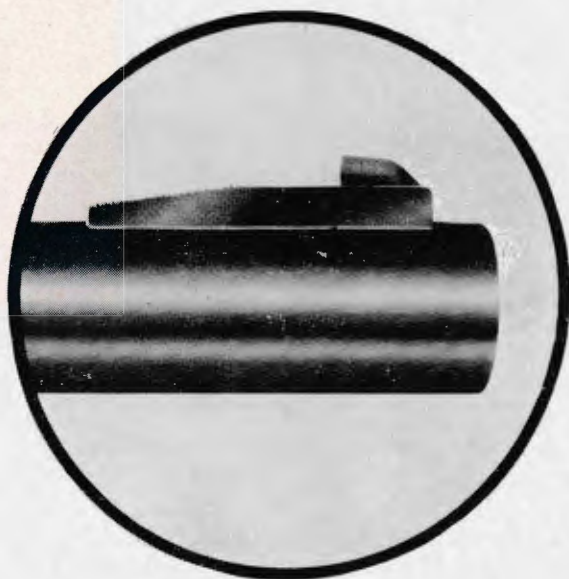


Bradley-type front sight.

Typical front sight beads.



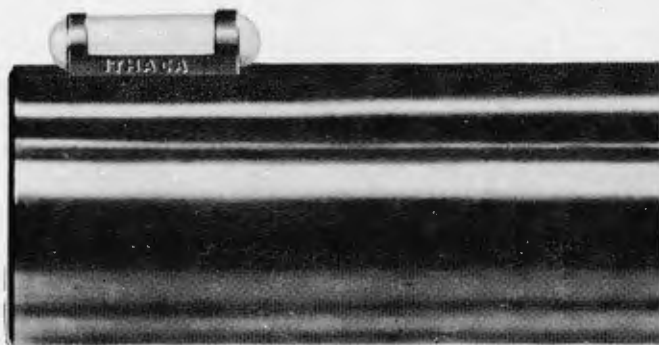




Ramp-type front sight of a slug gun.



The Trius Bi-Ocular front sight combined with a rib.



The Ithaca Raybar sight of translucent plastic.

protable clay target traps, have what they call the "Trius Bi-Ocular" front sight. This sight shows a spot of light right in the very middle of the bead, *if* the gunner is looking down the barrel with the proper eye. (That is with the right orb if he is right handed.) If he is trying to aim with the left eye he does not get the spot light. It is the neatest thing yet to show up cross-firing.

These are good sights. Much better than the standard article. All will help the shotgunner whether he is a meticulous aimer or one of these slapbang artists who swears by all that is holy that he never sees the barrels, much less the sight!

Best accessory to improve the shooter's aim and swell his bag is a rib. This gizmo is in effect a breech-to-muzzle sight. It picks up the marksman's eye and smoothly and effectively carries his gaze right on down the barrel to the muzzle end. It smoothes away all the gaps, humps and bumps from one end of the gun to the other and provides that continuity the gunner needs to hit better. Along with this, it permits him to maintain a lot more constant elevation for all his shots. And it puts the damper on cross-firing as well as canting. The rib needs two sights, good though it is. One of these at the forward end and another midway of the strip of metal.

Ribs can be low, intermediate, and high. They can be solid in type and also ventilated. Some are quite narrow and others are quite wide. Some are stippled, serrated or grooved. Others are smooth and shiny. The rib may commence right at the breech of the action, if it is on a double barreled shotgun; or if it is on a repeater—either pump or auto—it will be attached entirely to the barrel. Because the rib stands above the gun barrel it will make the gun shoot low unless the fellow who installs it knows his business. The properly installed rib is low at the back where it makes juncture with the receiver (this on repeaters), is higher throughout the middle portions, and again tapers down in height at the muzzle. The appearance to the eye as the gunner looks over the rib is one of flatness. He is not aware of the low ends on the device. This is as it should be, and will provide a gun that does not shoot low.

Another fault of some ribs is that they are built too low at the muzzle and such installation will account for a high shooting gun. This is almost but not quite as bad as the piece that plops it shot charge below the mark.

The acknowledged expert on the installation of shotgun ribs is Ernie Simmons of Simmons Gun Specialties. This outfit specializes in the manufacture and installation of raised ventilated ribs and understand very well the importance of rib height. It is quite critical believe me.

Factory guns are offered more and more with ribs installed at the plant. These, you may be sure, have ribs of such a height as to provide good elevation. The run-of-the-mill rib is  $\frac{5}{16}$ " in width. Simmons offers them at  $\frac{5}{16}$ ", also  $\frac{3}{8}$ " and a wide job of a full  $\frac{1}{2}$ ". Poly Choke, the variable choke people, regularly install a well-made rib which is  $\frac{5}{16}$ ". The splendid Remington Model 1100 auto-loader, one of the best of the skeet guns, has a factory rib of  $\frac{5}{16}$ " with a pair of sights; the front of ivory,  $\frac{1}{8}$ " in width. The raised vent rib on the new Savage Model 440 over/under is only  $\frac{1}{4}$ " in width. This is a common width of many Continental ribs.

The Browning Company came along with something brand new when they developed what they call their "Broadway" rib. This baby has a full width of  $\frac{5}{8}$ ". You have to see it to believe (Continued on page 60)





# Hunting For

**O**UTFITTERS, GUIDES, AND HUNTERS, all have a tendency to use the phrase "trophy hunting," quite improperly. The outfitter and guide who advertises or answers inquiries from prospective hunters, with the statement; "I specialize in trophy hunts," is misleading his prospects. And the hunter who writes about a hunt and tells you that he is a "trophy hunter" is also quite frequently misleading you.

Just what is a "trophy"? I think there should be a distinction made between a "trophy," taken by an average hunter and a Record Book Trophy. The one is any animal that the hunter personally feels is a trophy and the other is of such excellence that a record is kept of it. In this day and age there are very few record book trophies taken in any one year. Record book trophies, both here and abroad are becoming increasingly hard to get. Since Boone and Crockett have been keeping records of our North American game, some species have produced under a 100 of record proportions and around 200 for some of the more plentiful species; in records covering quite a number of years.

However, the outfitter who advertises that he guarantees "trophy hunting," is frequently implying that he can produce *Record Book* trophies, and the hunter who writes that he is a "trophy hunter" often leads an outfitter to think that this is his only interest. I think this is the wrong use of the phrase, "trophy hunting." Any animal becomes a "trophy" to the owner if he regards it as such. A hunter who goes quite a distance and spends a considerable amount of money and time on a hunt doesn't usually do it just to take home some meat. He wants that "trophy." He wants to take pictures of it and have something to talk about when he gets back home. To him it is and rightfully should be a "trophy."

Wyoming, the state that has about the largest antelope kill per season and issues between 24,000 to 40,000 permits, has only around ten heads taken in one season that are eligible for the record book—and some years only one or two. This certainly doesn't prevent the antelope hunters that get a nice head or even a small set of horns from taking home their trophy and having it mounted. Perhaps, for him it will be the best antelope trophy he ever gets.

All good outfitters and guides try to please their hunters because this is the best kind of advertising they can have. However, it is getting harder each year to find really big heads or any type record book animal—on this continent as well as in foreign countries. In Wyoming, a non-resident now has to kill bulls and if he passes up a four or five pointer, waiting for a real big one, he may go home empty handed, so he usually takes the smaller one. Because there are more hunters in the field each year, more game is killed and, as a consequence, the little ones just don't get a chance



*Les Bowman*  
By LES BOWMAN



Though not a record, author considers this a trophy.



# A Trophy

to be big ones. It is quite common to see a herd of 40 to 70 elk without a single six point bull. Plenty of spikes and small bulls, though. Only as long ago as 10 years, we always expected to bring in three or more elk heads with a spread of 54 or more inches and six or seven points to a side, during a single hunting season. Today, an outfitter considers himself lucky to get such a head for just one hunter.

Good game propagation and conservation have kept the game herds high in numbers but they just don't live long enough to grow those big sets of antlers anymore. Only an occasional head of antlered or horned game animal is now taken that will go in the record book.

Personally, I have never been interested in record heads. My idea of a trophy head is a symmetrical, well balanced set of horns on a good clean-looking head. During the years I have hunted them, I have killed quite a few Big Horn rams, some of them are quite large. But my favorite is one that has a beautifully matched set of horns that are not broomed off at all and make a full curl, although they are not as massive or heavy as several others I have. The most beautiful ram head I have ever seen is one of a desert ram that I killed in lower Baja, California, some years ago. This is also a symmetrical, unbroomed full curl, on a beautiful cape, a real trophy as far as I am concerned.

Many times it is the time, place, and condition under which a hunter kills a head of game, that makes this one a best liked trophy. Or perhaps it is the first one of a type, that makes it a trophy. This is particularly true of game killed by young hunters. Sometimes it is the shape rather than size, sometimes because it is a freak or non-typical head. My favorite deer head mount is a large mule deer, with antlers of a very wide spread and heavy in beam and tines that go straight up. I have an antelope "trophy" that has a spread of 24 inches (which disqualifies it for the record book) and a length of 17 inches. It has always been a great conversation starter for the many years it has hung on the dining room wall, and is certainly my favorite antelope trophy.

One of the largest elk heads I ever shot has only five points to a side but it is perfectly symmetrical and the beams are massive all the way to the ends, with bases 11 $\frac{1}{4}$  inches around. Actually, this set of antlers could go in the record book. Except for a freak set, I have never seen a two point set. They go from a spike to three points in the third year. Many very old elk have only 4 or 5 points to a side as they tend to regress in antler growth as they grow older. Not all six point elk are large and this also applies to ones with seven or eight points to a side, too. In fact, quite frequently these antlers with many points are small in the beam and some are just plain (Continued on page 62)



This elk, while not the biggest, is very uniform and symmetrical.



By LOUIS A. GOTH

# THE PARIS GUN





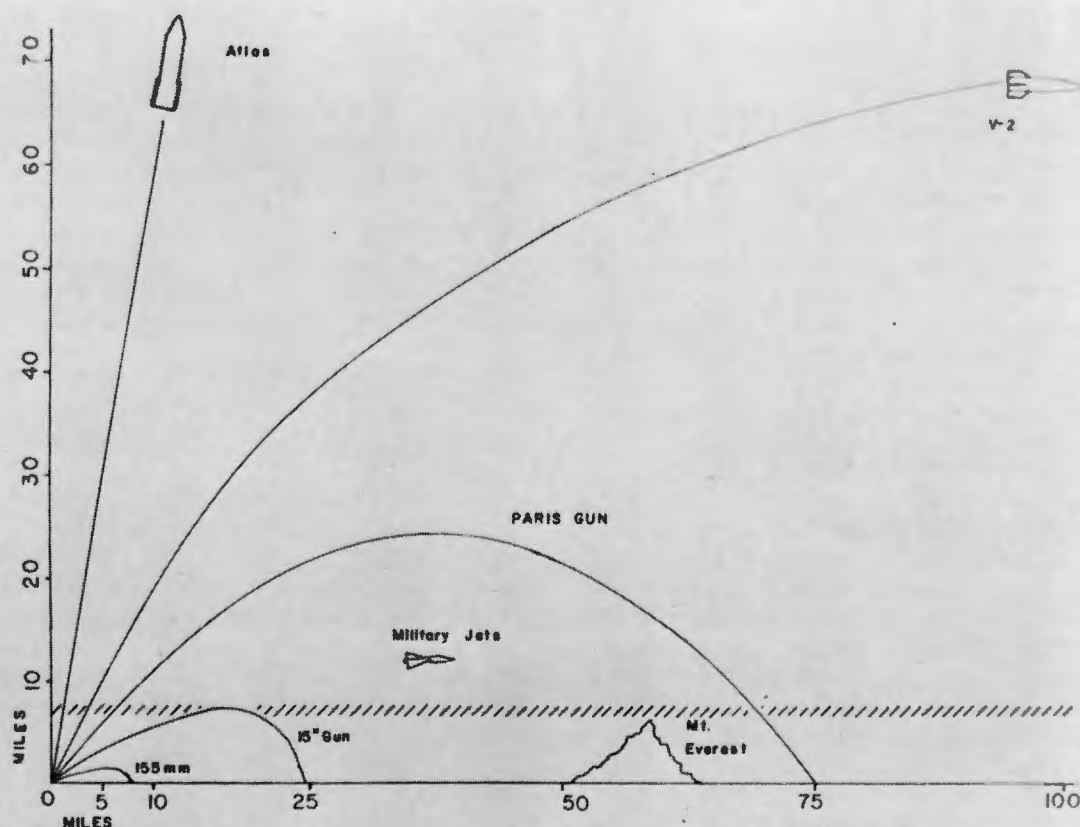


Chart showing the comparative distances and altitudes of various weapons.  
Note the comparatively short range of the 155 mm Howitzer used in WW II.

ON MARCH 23, 1918, at 7:15 in the morning, a terrible explosion occurred on the Quai de Seine in the heart of Paris. It killed three people and left a smoldering eight foot hole in the street. Stunned survivors stared at one another and puzzled at the cause of the blast. Most of them, however, hardened to the rigors of living in a city that had been at war for four years, dusted themselves off and went about their business. Fifteen minutes later a second explosion shook the Rue Charles V and fifteen minutes after that a third heaped rubble and death on the Boulevard de Strasbourg near the crowded Gare de L'Est.

With clock-like precision, the explosions echoed and re-echoed throughout the city until late in the afternoon. Rumors and panic followed closely in their wake. Many dazed and nervous inhabitants blamed saboteurs while others wondered if the Germans had invented an airplane or zeppelin that could fly so high it could not be seen. Some, coming closer to the truth than they realized, speculated about a pneumatic cannon hidden in the suburbs and silently lobbing its shells by air pressure.

The trains that left Paris that night were crowded with refugees. It was the lack of warning rather than the damage done that caused frayed nerves finally to give way. Paris had been bombed before both by zeppelins and airplanes, but the attacks had always been preceded by sirens and the comforting clamor of anti-aircraft guns. This new weapon was different. There was no time to take shelter or even to duck. It was a frightening almost incomprehensible experience.

Three days earlier, on March 21, the German armies had launched what was to be their last major offensive of World War One. It was an all or nothing gamble. To Gen-

eral von Moltke, the chief of staff, and his aides, there were several reasons for taking the chance. One, the signing of a treaty with Russia in the fall of 1917 released thousands of troops for use on the western front, momentarily giving Germany a numerical superiority. Secondly, while America had entered the war, her forces were still green and practically untrained. Thirdly, the French army, which had borne the brunt of the fighting, was near exhaustion. There was still a fourth reason, a secret weapon designed specifically to crack whatever was left of French morale. Its target was Paris, the very soul of French resistance. Though originally the main objective of the German sweep, the City of Light had remained relatively unscathed by the war. It had become the symbol of the Allied will to fight. If Paris could be brought under attack and its population made to panic, that panic might well spread through the French armies—or so the Germans thought. They under-estimated the toughness of the average Parisian and over-estimated the effectiveness of their new weapon.

Within two hours of the first explosion, Allied military experts knew the kind of weapon they were facing and within four hours they were taking counter measures. Bomb squads carefully combed each crater for metal fragments. When these were pieced together, they were quickly identified as coming from an artillery shell casing. Paris was being bombarded by a cannon of unbelievable range! The Allied experts were astounded, but not panicked. By plotting the dispersion of the hits on a map, they were able to determine the general direction from which the shells were coming. This indicated a firing position twenty miles behind the nearest German lines and nearly seventy miles from Paris! The heaviest naval guns then known could lob





## THE PARIS GUN

their shells approximately thirty miles. The Germans had either built a cannon of gigantic proportions or they had discovered some new principle or method of gunnery. Actually, they had done both, but for the moment, the Allies were more interested in stopping the bombardment than in analyzing its cause.

The first step was to pin-point the exact location of the gun or guns. Here, the Allies were lucky. A search of aerial photographs of the sector, taken earlier in the month, revealed railroad tracks leading into the Crepy forest, an ideal hiding place for artillery. Now there was a target and Allied airdromes near Paris were given orders to blanket bomb the woods where the tracks disappeared into it. Meanwhile, the shells continued to crash down on the city at fifteen to twenty minute intervals. Shortly after take-off, the planes were back at their bases. Smoke generators and anti-aircraft fire had frustrated the attack. The Germans were obviously well prepared to defend their secret weapon. Something had to be done to counter the barrage and there was only one dangerous possibility left. A 14 inch railroad gun could reach the forest if it could be placed near the front lines, but it would take time. There seemed to be no alternative. Under cover of darkness, the tedious work of laying tracks and building an emplacement for the gun began.

The barrage, which stopped late in the afternoon of the first day, began again the following morning. As the second day wore on, it became apparent to the French that the Germans were either mishandling the gun or else it was wearing out. Many shells fell harmlessly in open fields in front and to either side of the city. The third and fourth days confirmed the suspicion that the gun or guns had come to the end of their useful life. Only a half dozen shells hit the city on each of those days, but one of them struck an arch in the roof of the Church of St. Gervais during Good Friday services. The roof collapsed burying 88 worshipers in the rubble; it would be the

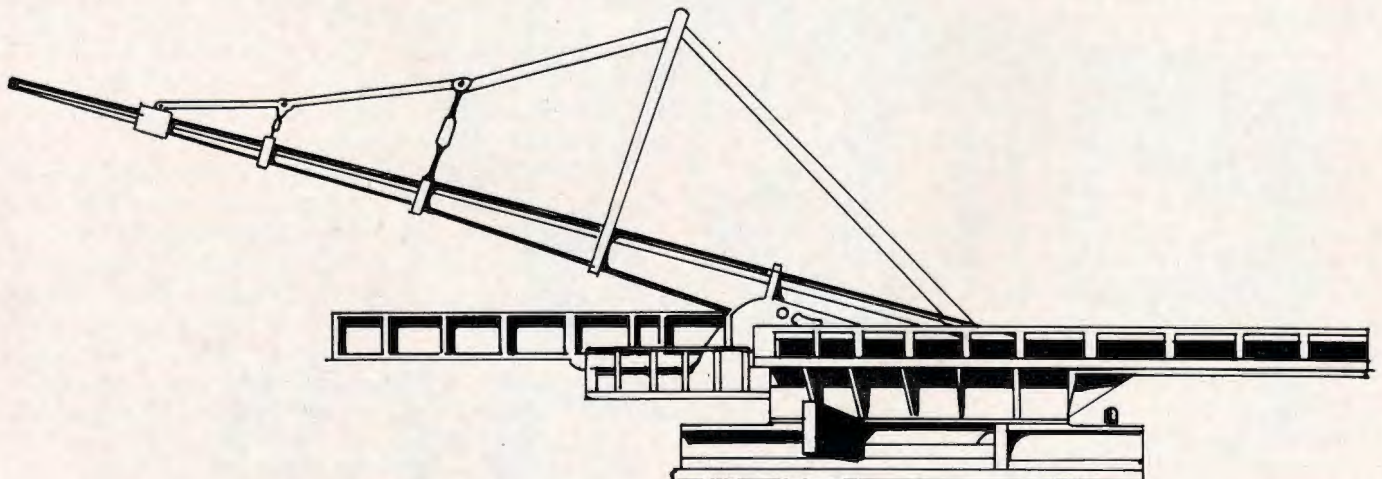
worst disaster of the entire bombardment. The French, of course, could not realize the difficulties the Germans were having with their super cannon.

Initially, there were three camouflaged guns in the Crepy forest which fired alternately. The coordinated efforts of more than two hundred men were needed with each one and this included mathematicians and astronomers. The barrels of two of the guns wore out after an average of sixty rounds and the third mysteriously blew up. It took four days to replace the barrel on one of the guns and by the end of that time the French were striking at the sites both by air and artillery forcing the Germans to move. They never again had more than one gun in action at a time. The installations took too long to build and the war moved too fast.

As the French had surmised, the Paris gun was monstrous; the barrel alone was nearly 120 feet long. Size, however, was not the secret of its range. The Germans had indeed discovered a new principle of gunnery. According to one story, its source unknown, the Krupp munitions firm at Essen, Germany made the discovery by accident shortly before the war. Company engineers, while testing a new model of a ten inch naval gun, fired it at an unusually high elevation and lost the projectile. They located it only after an irate constable reported the unwanted arrival of a shell in a village orchard many miles beyond the target area. When the puzzled engineers finally found an explanation for what had happened, they termed it stratosphere shooting. It was a new concept based on diminishing air resistance. In other words, a shell will travel much farther through the stratosphere where air resistance is negligible than it will in the dense blanket of the atmosphere close to the ground.

To make good use of this principle, the gun, of course, would have to be fantastically powerful. The Krupp engineers, their imaginations heated by the possibilities, put their thoughts on paper and submitted a design for a long range gun to the army high command in the early days of the war. It was rejected. No one, at that time, expected the war to become a stalemate. Those plans were dusted off in 1917 and Krupp was ordered to build a gun that could bombard Paris.

The munitions firm was in a quandary. There was neither time nor material to construct a new weapon entirely from scratch. They were *(Continued on page 51)*





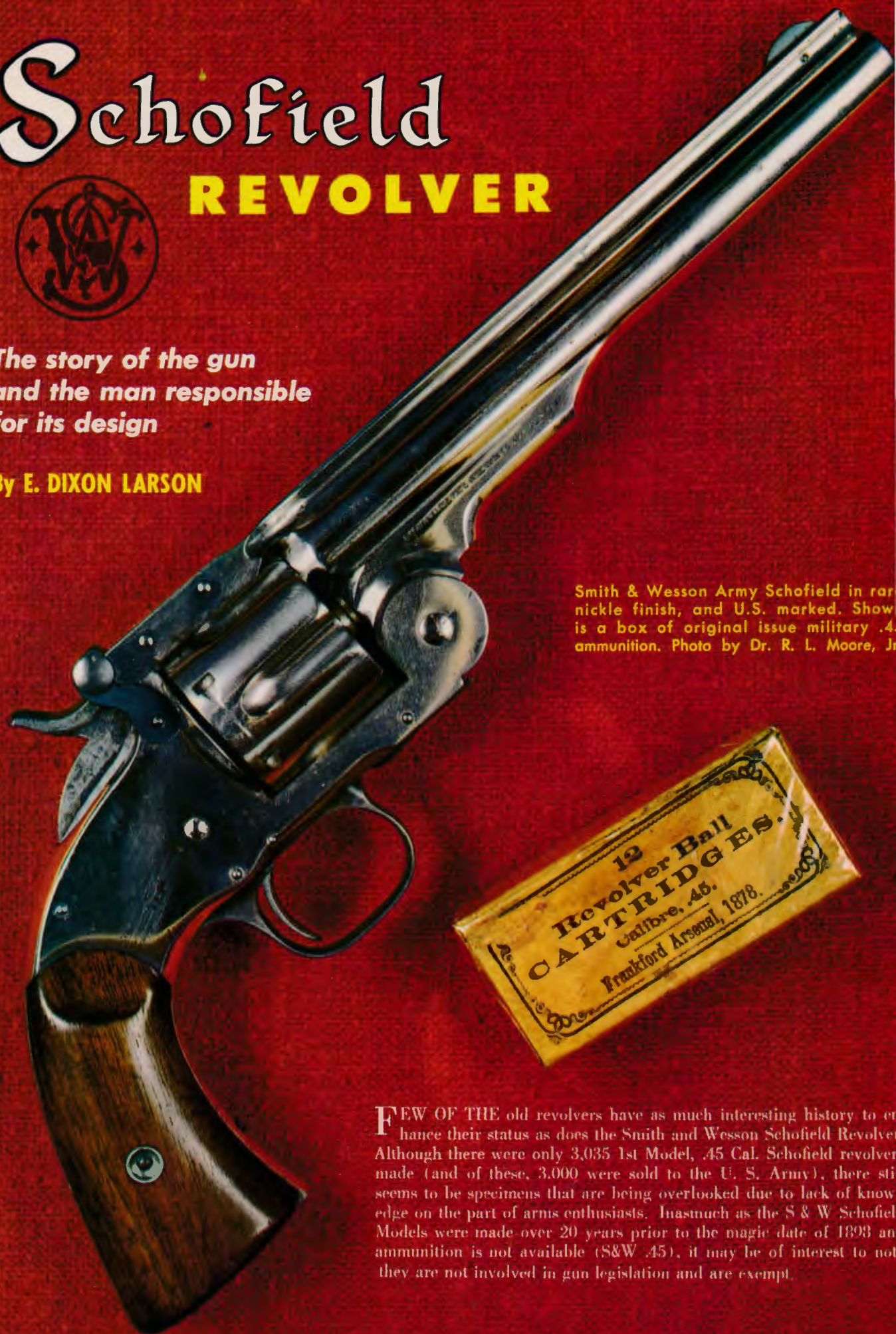
# Schofield



## REVOLVER

*The story of the gun  
and the man responsible  
for its design*

**By E. DIXON LARSON**



Smith & Wesson Army Schofield in rare  
nickle finish, and U.S. marked. Show  
is a box of original issue military .45  
ammunition. Photo by Dr. R. L. Moore, Jr.



**F**EW OF THE old revolvers have as much interesting history to enhance their status as does the Smith and Wesson Schofield Revolver. Although there were only 3,035 1st Model, .45 Cal. Schofield revolvers made (and of these, 3,000 were sold to the U. S. Army), there still seems to be specimens that are being overlooked due to lack of knowledge on the part of arms enthusiasts. Inasmuch as the S & W Schofield Models were made over 20 years prior to the magic date of 1898 and ammunition is not available (S&W .45), it may be of interest to note that they are not involved in gun legislation and are exempt.





Lt. Colonel George W. Schofield, as he appeared for his commission from Major to Lt. Colonel. He was with the 6th Cavalry at the same time that Custer was with the 7th.

# THE S&W SCHOFIELD REVOLVER



The more common S&W Schofield revolver in blued finish with second type catch.

The Schofield had its beginning as a modified version of the first S&W American issued to the troops in 1871. Major George W. Schofield recognized the weaknesses of the "American Model" and proceeded to improve them as per his patent of June 20, 1871, No. 116225. His modifications involved a lock fast for securing the barrel while firing, cylinder stay for holding the cylinder in position when the weapon is opened for loading or ejecting spent cartridge cases, and third, provisions for a simple and effective spring stop. The preceding is almost as stated by Major Schofield in his original disclosure. After two years of waiting, Major Schofield wrote a letter to the Springfield Armory stating further desirable modifications to his original patent; namely, improve the simplicity for revolving the cylinder and ejector system, cylinder stay, device for holding the cylinder, arrangement of the rear sight, an ejector that does not act on the cartridges until wide open so that spent ones can be reloaded without the disadvantage of recovering unfired cartridges, and easier ejection with one hand or without using two hands and changing their respective position. In 1873, the New Model Schofield was field tested. Extensive tests were further made in February 1874. The final report showed that the Schofield Model as proposed was suitable for military service and that a limited number be placed in the hands of the troops for further trial. Modification of

the weapon and acceptance became an obsession to the now Lt. Colonel Schofield.

Many letters exist concerning the correspondence of Lt. Colonel Schofield and various branches of the government and the Smith and Wesson Company. Letters beginning in June 1870 and continuing until December 1882, a period of some 12 years. Apparently George Schofield, then a Major, became interested in the arm while visiting his brother, General John M. Schofield, President of the Small Arms Board, during a convention held in St. Louis, in the Spring of 1870. In reviewing old records and correspondence, his brother's position may have been very helpful in promoting his proposed revision to the arm manufactured by Smith and Wesson as the "American," for it was well known that the military was very partial to the Colt Single Action Army Model. The first Schofields were delivered and issued to the troops in 1875. Considering the number of other models that Smith and Wesson made such as the Russian Model No. 3, and even the American, the Schofield Models can be considered very scarce. The only real obvious difference between the 1st and 2nd Model is the shape of the barrel latch integral rear sight. Of the total production of the 1st and 2nd Model Schofields, 3,035 were of the 1st type, and 5,250 of the 2nd type. Precisely how many of each model that were not purchased by the military is unknown. Some records indicate that about 35 of



the 1st Models were left for civilian use, other conflicting records indicate a few more. As for the 2nd Model, records are extremely conflicting as it is believed inventories and orders mistakenly encompassed the American and the big No. 3 Models, thus showing a few hundred 2nd Models available for civilian use. Some of the 2nd Models were routed to the local militia, and some declared a surplus, which may account for the greater number in civilian use. Of interest, is the request for a nickel plated, engraved model by Bvt. Lt. Col. George Washington Smith of Fort Clark, Texas, Chief of the Indian Scouts 9th Cavalry, who wrote:

"If you are not quite ready for orders from the general public, I am sure it won't embarrass you to send one little pistol to the frontier of the Rio Grande, where if any place the Smith and Wessons are wanted."

An ornate Schofield was sent; Col. Smith later lost his life in action against the Apaches near McEwers Ranch, New Mexico.

It should be noted that the Indians, who usually had little interest in side arms, liked the S & W. Probably because of the simplicity of unloading spent cartridges and the ease of reloading. Average price for the 1st and 2nd Models per lot of 100 was \$13.50 each or \$17.50 retail.

Of interest is the fact that much confusion is recorded relating to the incidents where commands found that the S&W short .45 Cartridge would fit the Single Action; but the long .45 Caliber Colt Single Action cartridge would not fit in the S&W Models. Statements of the military indicate dismay and mitigating circumstances had prevailed when this was discovered, particularly in an Indian engagement. This precipitated the Army recalling all the S&W's and nothing but Colts becoming the only official issue. Surplus Schofield models were in demand by the Internal Revenue Officers who reported the convenience of the S&W in reloading was superior to any other weapon utilized.

Many "Old Timers" like to theorize that had Lt. Col. George Armstrong Custer been equipped with the Schofield (invented by an adversary of his) which would have afforded him rapid unloading and reloading, the end result and the final tabulation might have been a little more even. On the other side, as a matter of record, the 1877 May issue of the "Army and Navy Journal" states:

"S & W Arms found favor at first in 1870-71 but frequent breakages, difficulties in taking it apart and assembly, fear of accidental discharge, soon caused rejection. The plan of this revolver undoubtedly the best ever invented for mounted troops, but in reality the mechanical details are not perfect or strong enough. Give Smith and Wesson credit for originating and bringing out the system or general plan in working shape and for skill and perfect workmanship in making the Schofield model revolvers for the United States Government, but at the same time let's all give the full name to this arm when writing for papers. A return of Ordnance made by any officer of the Army, responsible for these revolvers, would be returned for correction were this part of the official name omitted."

The letter was signed by "Barrell Latch," but evidence has proven that it was really written by Major Schofield himself . . . almost insane over the values of his conception in the Smith and Wesson Schofield Revolver.

Among the interesting variations are those in the surplus Army Models cropped and sold in a 5½" barrel length. Sold to the American Express, Wells-Fargo and Company, and miscellaneous municipalities as was the American sold to the Nashville Police, etc. Such arms are easy distinguished as they are stamped on the ejector housing, right side. Caution—many spurious stampings have been observed.

Unfortunately, such a fine arm was never really popular or accepted. After all his (Continued on page 64)

Schofield's patents of 1871 and 1873. Barrel catch (top) is the first type; second type (below) was used on all of later models.

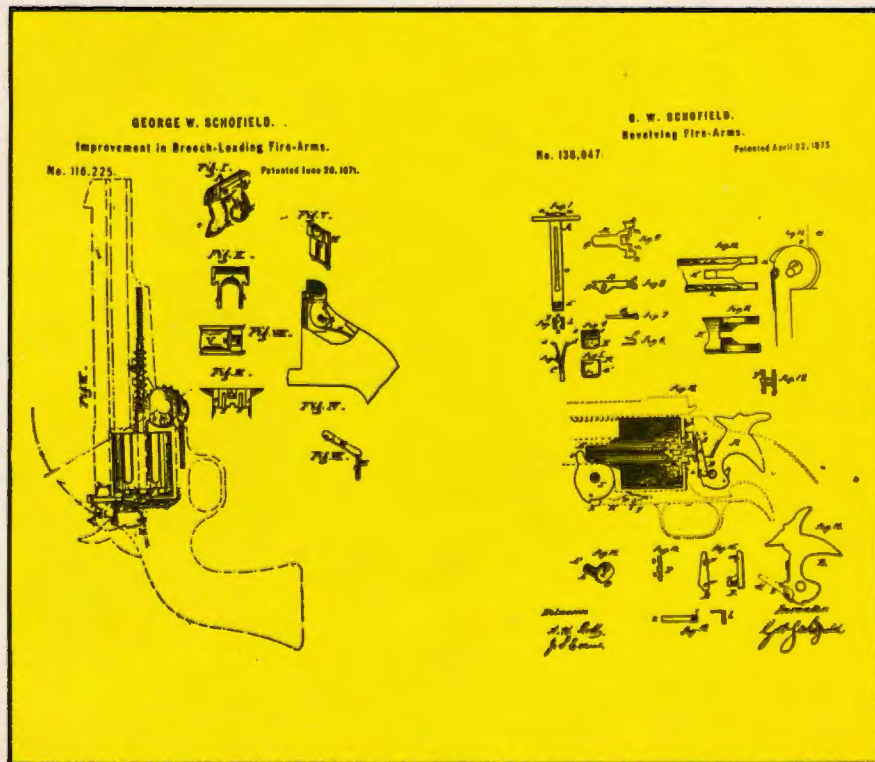
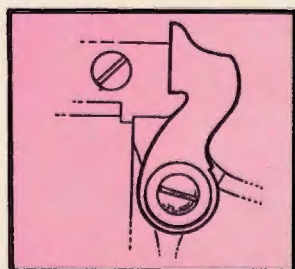
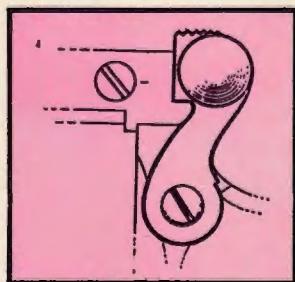




Photo by B



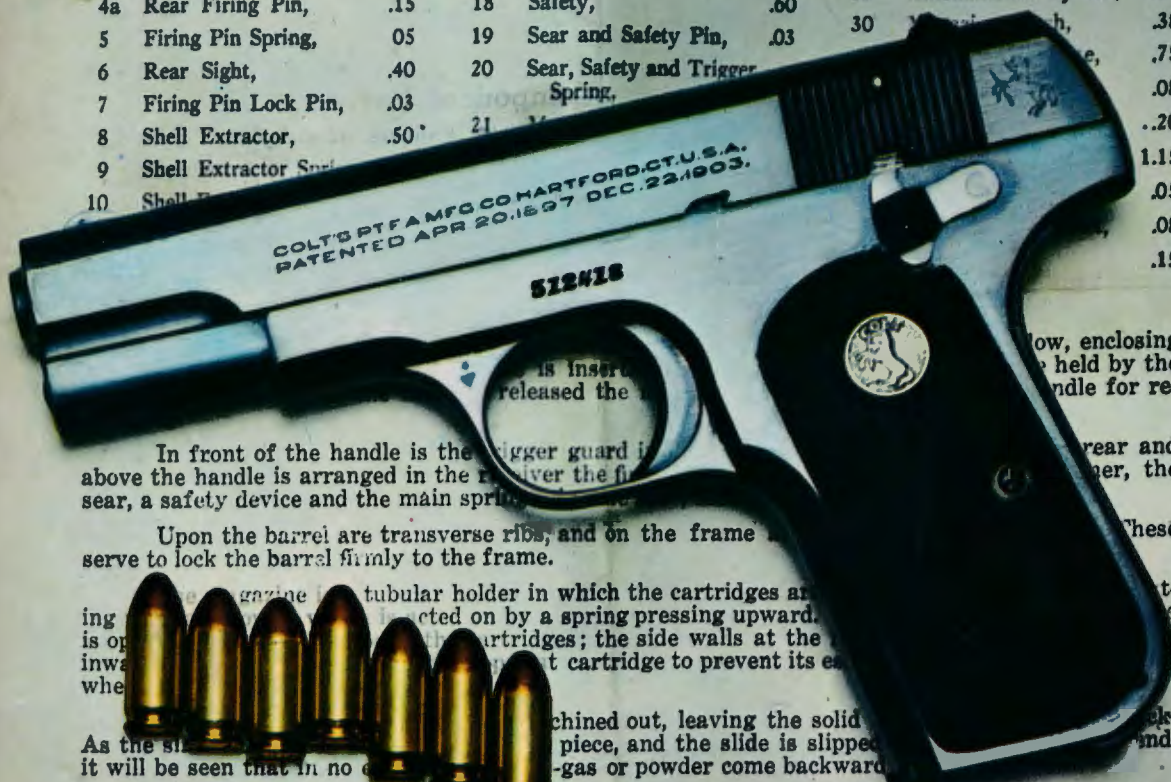
# Component Parts of Colt Automatic Pistol

Pocket Model.

CALIBERS .32 and .380 HAMMERLESS

In ordering parts, please be sure to give number and caliber of Pistol, as improvements have been made since first issue.

Receiver,	\$12.75	14	Hammer Roll,	\$ .05	27	Retractor Spring	
Slide,	2.50	15	Hammer Roll Pin,	.03		Guide,	\$ .10
Barrel,	6.50	16	Trigger,	1.20	28	Automatic Grip	
Front Firing Pin,	.18	17	Sear,	.75		Safety,	1.25
4a Rear Firing Pin,	.15	18	Safety,	.60	29	Automatic Safety Pin,	.03
5 Firing Pin Spring,	.05	19	Sear and Safety Pin,	.03	30	Hammer Spring,	.38
6 Rear Sight,	.40	20	Sear, Safety and Trigger			Spring,	.75
7 Firing Pin Lock Pin,	.03		Spring,				.08
8 Shell Extractor,	.50	21					.20
9 Shell Extractor Spring,							1.15
10 Shell Extractor Pin,							.05
							.08
							.15



In front of the handle is the trigger guard. Above the handle is arranged in the receiver the firing pin, sear, a safety device and the main spring.

Upon the barrel are transverse ribs, and on the frame are transverse ribs. These serve to lock the barrel firmly to the frame.

The magazine is a tubular holder in which the cartridges are held. It is operated on by a spring pressing upward. The magazine is open at the top; the side walls at the bottom prevent the cartridges from falling out. The magazine is closed by a cartridge to prevent its escape.

As the slide is moved forward, the firing pin is pushed forward, leaving the solid firing pin piece, and the slide is slipped forward. The firing pin is pushed forward, leaving the solid firing pin piece, and the slide is slipped forward. The firing pin is pushed forward, leaving the solid firing pin piece, and the slide is slipped forward.

The magazine, as will be noted in the illustration, has holes drilled in the sides, which act as indicators to designate the number of cartridges in the magazine.

The pistol is provided with a safety device which makes it impossible to release the hammer unless the slide and barrel are in their forward position and safely closed; this safety-device also serves to control the firing and to prevent more than one shot from being fired for each pull of the trigger. It consists of a small vertical piece mounted in front of the sear in the receiver, the end of which slightly projects from the top of the receiver; in its raised position, when the bolt and slide are closed, it finds a corresponding recess in the bottom of the bolt. In this raised position, the safety-piece does not interfere with the operation of the trigger, but when the slide is moved rearward the bottom of the bolt depresses the safety-piece which, in that position, prevents the movements of the trigger from operating the sear, and thus the hammer cannot be released until the slide is again in its forward position, locked to the barrel.

COLT POCKET .380 AUTO PISTOL







# THE TRAPDOOR 45-70



Top to bottom: Rifle Models of 1873, 1879, 1884, 1889.

Reproduced on the facing page is this month's cover—without type—suitable for framing, in reponse to the many requests for these prints. The cover photo of the Springfield .45-70 is from Dr. R. L. Moore, Jr. of Philadelphia, Miss.

THE FAMED “trapdoor” Springfield .45-70 was chosen by a board of officers to replace the Model 1870, using the .50 caliber cartridge. The new .45-70 was, ballistically, a great improvement over the old .50-70. The new Springfield, Model 1873 continued from that time as the standard service weapon until the adoption of the Krag in 1892, and actually overlapped the Krag in service for several years.

There were four models of the “trapdoor” Springfield in the .45-70 caliber—the Model of 1873, the first issue, and succeeding issues of 1879, 1884, and 1889. Each of the four models have approximately the same dimensions—total length of 51.92”, barrel length of 32.375”, stock length of 48.70”, and a total weight of 8½ pounds. A description of the most distinctive and readily visible features characterizing each model is taken from the United States government publication, “Description and Rules for the Management of the Springfield Rifle, Carbine, and Army Revolvers.”

Model 1873—breech-block dated 1873; arched “Stepped” rear sight graduated from 1 to 4 on side; solid, one piece front sight; lock plate dated 1873; ramrod similar to that used in 1870 Model Springfield.

Model 1879—breech-block dated 1873; not arched in order to provide greater strength, March 1878; front sight has inserted blade held by rivet; “buckhorn” rear sight (of which there are four forms); ramrod head smaller and slotted, but not grooved, clean-out hole at end of ramrod groove under front end of guard plate, April 1879; lip placed under side of hammer head, January, 1880.

Model 1884—breech-block dated 1884; “Buffington” rear sight; straight corrugated trigger, March, 1883.

Model 1889—ramrod bayonet; breech-block dated 1884; sling swivel riveted to trigger guard.

Cadet models issued corresponded with the Model 1873, 1879, and 1884 and were identical except they were reduced in size. (Continued on page 71)





# BROWNING

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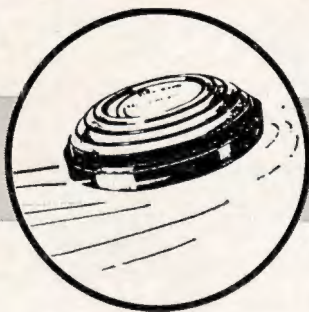
GM September GUNS Magazine

All you do to enter is fill in the information on coupon at left and attach it to a post-card—or simply write the information requested on a regular post-card and return it to GUNS today! **DO NOT MAIL ANY ENTRY IN AN ENVELOPE.** Your name will be entered for the drawing to be held September 1st. The winner of the Browning (scope and sling added for illustration purposes only), will be notified by mail, and announced in the November GUNS. To enter it is not necessary to use coupon at left. A plain post-card will be accepted.

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CLIP COUPON





# PULL!

By DICK MILLER

**H**OW MANY MEN, women, and children are permanently lost to the clay target sports for fear of recoil? All of us who are followers of either trap or skeet know that recoil is no factor, and that small men, little girls and little boys, as well as small women, shoot hundred of shots per day with no ill effects from recoil. But, I am often shocked to hear remarks from non-shooters who indicate that the one thing most likely to keep them away from the gun club is that they think a shotgun will literally knock them down if they muster enough courage to pull the trigger.

I'm afraid that far too many parents and grandparents unknowingly foster this impression when they reminisce about their experiences with a first shotgun in their youth. It is true that some of the old timers, with crooked stocks and heavy loads were really punishing to shoot, and that some of the tales about being knocked flat by gun recoil were literally true. We know that this is no longer the case, or need not be the case, but many people who could swell the clay target ranks don't know this, therefore they avoid a gun club experience like they would a plague. I'm also afraid that we lose more prospective shooters than we think when their first shoot is not a particularly pleasant one.

There are two things which should happen if a first-time visitor to the gun club is to return, or if a first time exposure to shotgun shooting is to create a desire for more. One, the new shooter must hit enough targets to make the game interesting. If too many targets are missed, the prospective shooter becomes a prospect for some form of outdoor recreation other than shooting. No one develops much affection for a game in which they do very poorly. Secondly, the new shooter must not find the experience physically painful. Both these undesirable situations can happen if certain basic precautions are not taken.

One of my major responsibilities with the old Sportsmen's Service Bureau division of SAAMI was to gain maximum converts to shooting, so

that the member companies of SAAMI could gain a bigger market for their products, which were guns and ammunition. Obviously, if a man, woman, or child had a shooting experience as a result of my efforts, and that experience was neither pleasant nor comfortable, my time, and the Bureau's money were wasted. Our efforts were not designed to drive people to fishing, boating, tennis, golf, or a host of other sports, in search of a pleasant outdoor experience.

Upwards of fifteen thousand men, women, and children who were introduced to clay target shooting via my Sportsmen's Service Bureau efforts taught me a lot about what it took to see that they hit targets, and not find the experience physically painful. For example, I soon learned that if you hand a shotgun to a small man, to a woman, or to a teen-age boy or girl, they will hold the gun loosely, and will invariably lean backward from the waist. You know, and I know, that if they are allowed to pull the trigger while in this position, the chances of their hitting a flying target are about on a par with the chances for a neighborhood kid building a rocket that will achieve lunar orbit. It also follows that because they are already off balance by virtue of leaning backward from the waist, when the trigger is pulled, the gun will knock them further off balance, with very likely painful results. In order to overcome this universal problem, I had to develop a teaching device that worked quickly and easily.

The teaching device was simply this: I asked the shooter to stand with both feet parallel, and both arms hanging loosely at the sides. I then placed the shotgun butt carefully on the right shoulder (all instructions are for right-hand shooters—for southpaws, simply reverse) making sure that the stock was placed on that portion of the shoulder which is made to accept a gun stock (not too low, not too high, nor out on the arm). I then asked the shooter to put his (or her) hand in the trigger guard (not on the trigger) and to point the gun at the

sky seeing only the sight.

At this point, the left arm was still hanging at the side. I explained here that there is no rear sight on a shotgun, as there is on a rifle, and that for all practical purposes, the human eye is the rear sight on a shotgun, therefore it must be looking right down the shotgun barrel (it is amazing how often this basic fact is overlooked in shotgun instruction). I then asked the shooter to lower the barrel from the vertical to horizontal, and to grasp the gun by the forend, while at the same time taking one step forward with the left foot only. Basically, what is accomplished here is that the shooter is looking along the barrel at about the point where the gun will shoot, and the weight is forward rather than leaning backward.

Because many women and girls, or small boys, were still leaning backward at this stage, I would take the hand-trap which I was holding in readiness for the next step, place it on the abdomen, and gently push the gun shoulder forward, to further insure that the shooter's weight was forward. Then, standing slightly behind the shooter, I used the hand-trap to flip a clay target out in the general path of the gun barrel. Bear in mind that I had two objectives in this situation, one, to make sure that the shooter hit targets, and second, to make sure that recoil did not forever drive the subject to a less painful sport.

In retrospect, I point out that these shooting clinics were sponsored by such diverse agencies as department stores, TV stations, newspapers, gun clubs, sportsmen's clubs, school districts, etc., and were most often open to boys and girls aged 12 to 18.

I learned very quickly that when you open a shooting instruction session to 12-year old boys and girls, you can get some mighty little kids! For reasons of gun and ammunition control, I used only 12-gauge guns, and the reader might be apprehensive about what a 12-gauge could do to a slight twelve-year old. Here is where I learned that if the teaching device is correctly used, you can even drop down to an eight-year-old with good results (one 8-year old I accepted with some mental reservation at a clinic for children of outdoor writers broke 9 out of ten targets, embarrassing some of the rest of the group).

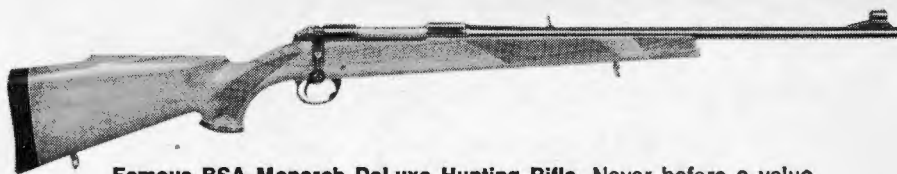
If you still have reservations concerning whether any man, woman, boy, or girl can effectively and comfortably handle a twelve-gauge gun, if the situation is handled correctly, let me share with you one more of my SAAMI experiences.

About 1960, I put on a shotgun trick-shooting demonstration pat-

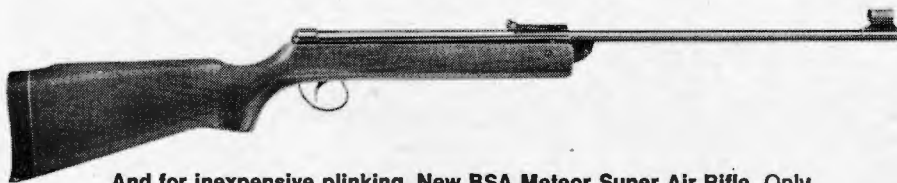


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turned after the routines of the late and great Herb Parsons for a Boy Scout jamboree of about 800 persons. After the demonstration, I explained to the assembled scouts that what they had just seen was not all that great, that any one of them could duplicate most of the shots they had just seen, after a little instruction, and asked for a volunteer to demonstrate this assertion. I looked down to make ready for the volunteer, and almost had a heart seizure when I looked up and saw a terribly crippled scout making his unsure way toward me.

Because I could think of no acceptable alternative at the moment, I prepared myself for what I thought was a shattering of all my pronouncements in front of a large audience in the bargain. When the lad shed his crutches, he was so unsteady on his feet that I was sure that the weight of the gun would topple him, not to mention what might happen when he pulled the trigger. I confess that when I flipped the clay pigeon in front of his gun barrel, I dropped the hand-trap and cupped my arms to catch him as he fell. He didn't fall, and he blew the target into dust, to the tune of one of the most enthusiastic cheers from an audience I've ever heard. I mentally congratulated myself on a one-time success, then became aware that the youngster was looking at me with one of the most pleading looks I have ever seen, asking if he could try again. I was tempted to leave well enough alone, but could not resist his pleading look. He smashed another target as authoritatively as the first.

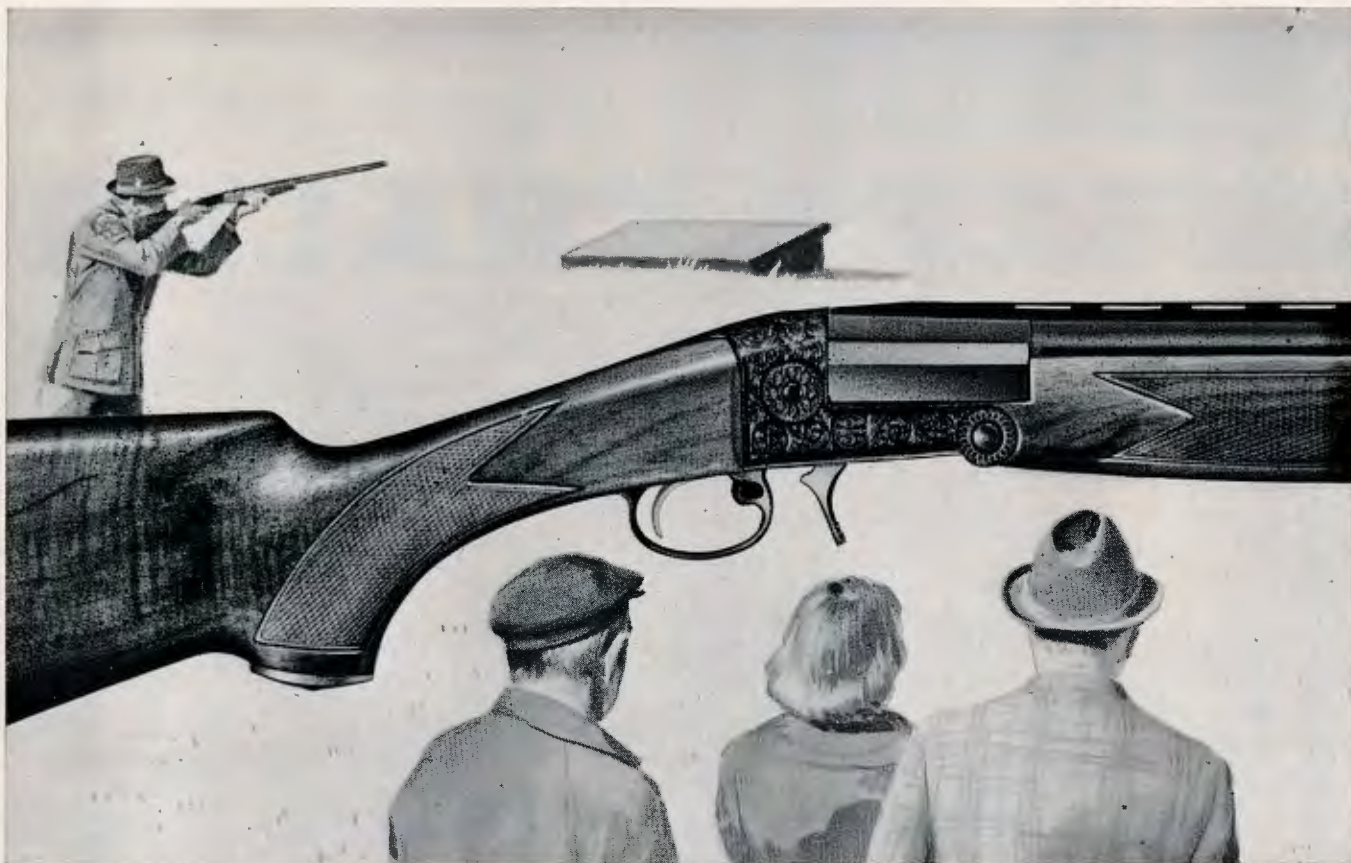
If you will indulge in me a little soul-baring, this moment, and the moment afterward when his parents told me in tears that their son had tried so desperately to do something normal boys could do, without success until today, was and is one of the highest points in my life.

Back to more mundane subjects. You may ask, why all this preoccupation with recoil and with hitting targets? It is simply because, as I stated in the beginning, we who are shooters have no idea how many converts we lose to the clay target sports (and hunting) simply because we violate one or more of the simple precepts I have outlined, or, when we see them violated, do not attempt to remedy the situation as best we can.

And, there is some safety in numbers. We who are shooters need all the numbers we can muster to turn away the constant threats to our sport, from people who have no understanding of its pleasures and virtues, and who may have had an unpleasant approach to shooting in time past.







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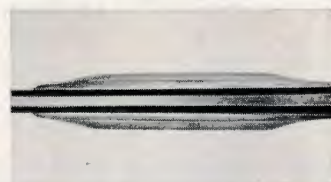
It still is. But this year, Beretta introduces the TR-2. A little more money, but just as big a bargain. The big difference in the TR-2 from the TR-1 is in its ventilated rib, which is extended right to the face of the breech, and in its modified opening lever. Outside of that, it's the same great gun.

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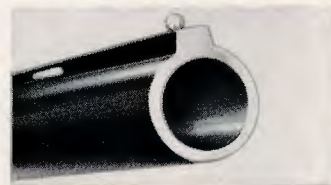
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# RADAR BULLET TRACER



**New technique can prove to  
be a boon to law enforcement authorities  
faced with harassing sniper fire**

By GEORGE E. TOLES

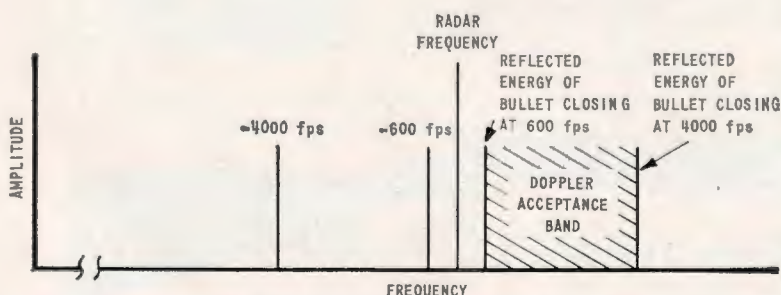


Fig. 1 illustrates Doppler radar detection.

**A**N EXPERIMENTAL radar technique which can detect and track a bullet has been developed by two research engineers at Cornell Aeronautical Laboratory, Buffalo, N.Y.

The engineers, Robert J. Wohlers and Ernest V. Ruda, say that an experimental radar device under development at the laboratory since 1965, might be used to locate snipers during urban disturbances and to help protect VIP's from assassins.

Effective control or containment of a sniper (or snipers) in a heavily built-up area depends principally on speedy and accurate determination of sniper positions. Once the location of a sniper has been established, conventional methods can be applied for suppression, with minimum risk to both the law enforcement team and innocent bystanders.

"It must be emphasized, however," say the engineers, "that such location and reaction must take place in an extremely short time to be truly effective and to offer minimum risk. The usual assassination attempt might involve only a few closely spaced shots, while the sophisticated sniper



Diagrams at right show the adaptation of the Doppler radar system as a gun-fire detector. This new use of radar will only detect incoming projectiles.

in an urban disturbance will probably try to avoid an all-out gun fight. To prevent detection, in all probability he will not try to fire more than a few rounds from a given position, but will change positions between firings. His goal, of course, is to avoid identification of his position."

From a technical viewpoint, the problem is thus resolved into determining a technique capable of single-shot detection (i.e., to develop a sensor capable of pinpointing sniper position on the basis of a single shot).

A number of schemes can be postulated to perform this function, each with its own capabilities and limitations. Passive sensors, such as infrared, ultra-violet, and acoustic, which appear to be attractive, have serious deficiencies, especially in an urban environment.

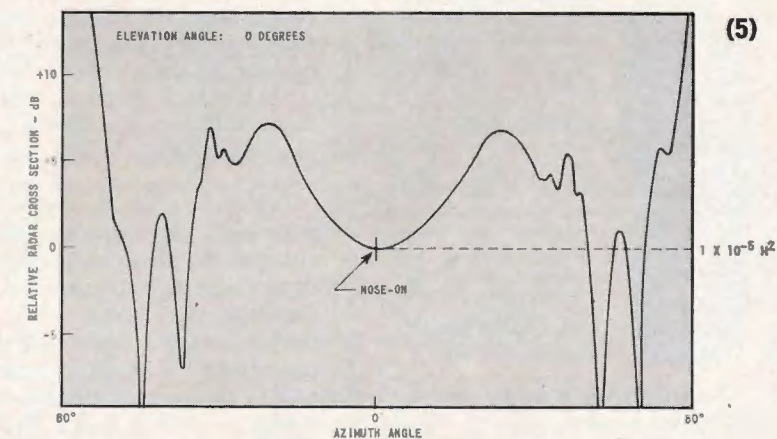
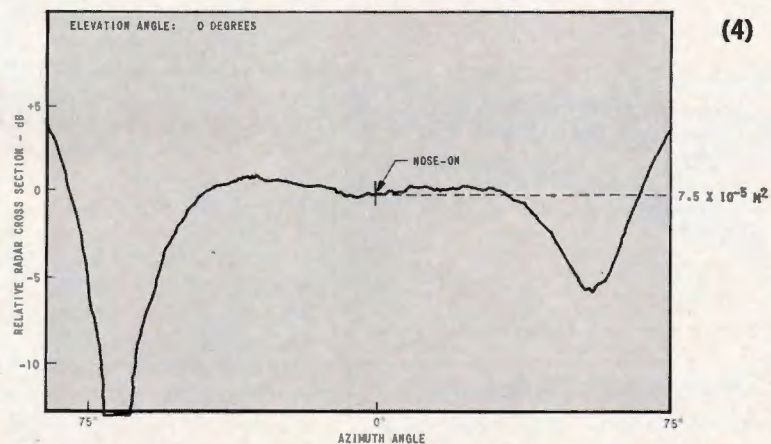
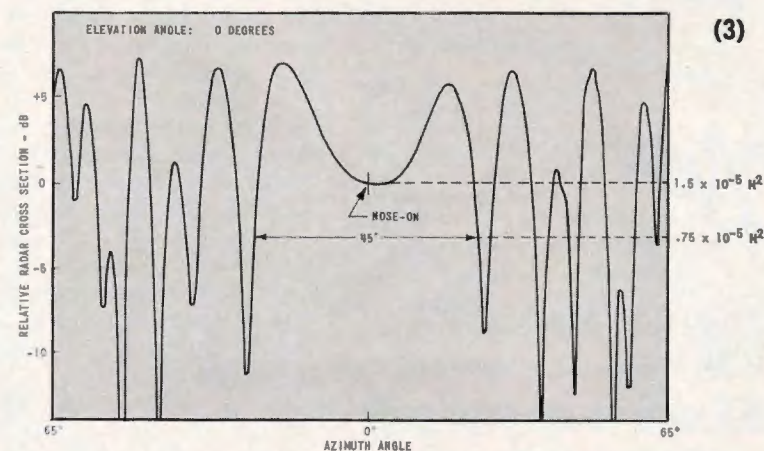
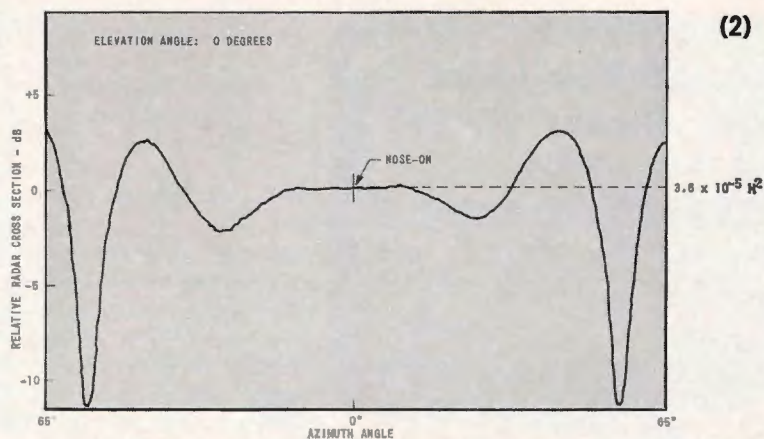
These deficiencies more than offset their principal virtues of compactness and light weight. As an example, say the Cornell Lab engineers, consider a simple, lightweight infrared detector. For gunfire detection, it operates by associating the high-temperature emission of muzzle blast gases with gunfire.

However, in an urban environment, there are numerous sources of equal intensity, including fires and hot buildings, as well as incandescent and fluorescent lighting, sun glint, etc. Thus, the false-alarm rate, or mislabeling of an innocent emitter as a source of gunfire, is intolerable.

"Slightly more sophisticated electronic circuitry requiring a closer match to muzzle-flash characteristics before a detection is noted can be built," say Wohlers and Ruda. "The system now becomes more complicated and does not completely overcome the false-alarm problem. For example, a simple firecracker or cherry bomb or photographer's flash bulb can yield an emission characteristic so close that it may be impractical to attempt to differentiate between it and a real muzzle flash. More important, however, is the fact that even a detection of a burst of infrared energy does not help to distinguish between friendly and hostile fire."

Acoustic detectors suffer from almost identical shortcomings, and a review of the fundamental problem reveals that both have deficiencies arising from measurement or detection of secondary effects. That is, every shot is accompanied by a flash or a blast, but not every flash or blast must be associated with a hostile shot.

A close examination of the overall situation quickly uncovers a unique observable. The one factor that cannot be found in the surrounding environment, yet is always present when a weapon is fired—is high. (Continued on page 54)





## SHOOTING ACCESSORIES

(Continued from page 25)

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American Flask and Cap Co. of Waterbury, Conn., became a major American supplier along with flask-makers M a t t h e w m a n, Capewell, Adams, Ames, Dingee and Stimpson.

Robert Dingee of New York City contracted with the United States Army under date of February 20, 1832, for 3450 flasks at \$1.30 each, the flasks to hold nine ounces of powder. The smallest graduation of the charger on these flasks threw 70 grains of powder. The flasks were the "bugle—U.S.—eagle" pattern, and were issued with the Model 1832 Hall percussion carbines to the U.S. Dragoons. Further orders were placed by the United States Government as follows: June 13, 1833, 500 flasks with spring tops; June 9, 1834, 250 flasks for issue with Hall's rifle; January 10, 1836, 200 flasks to hold eight ounces of powder and to be equipped with adjustable charger throwing a charge of from 85 to 100 grains.

N. P. Ames of Cabotsville and Springfield, Mass., was making "peace" flasks as early as 1837. The Ames "peace" flask was primarily the type with a circle of 26 stars, an eagle facing to the left, and the clasped hands. Other Government contracts for flasks with N. P. Ames are recorded under date of September 9, 1844, October 11, 1845, and August 14, 1846. I have seen specimens of the Ames flask bearing dates from 1838 to 1846.

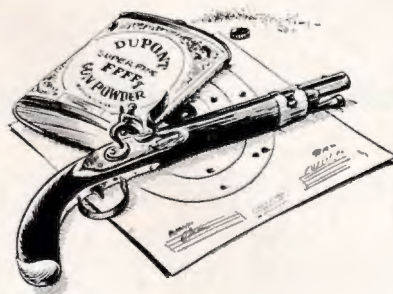
Ames appears to have been the earliest maker of the "U.S.N. and Anchor" Navy flasks. These flasks were of the one-pound powder capacity and replaced the horns previously in use; they were ordered by the Navy in 1842. Ames received a Government contract April 12, 1843, for a quantity of this "U.S.N. and Anchor" Navy flask, and George Stimpson received a similar contract dated December 18, 1844. There is also a record of a contract made by the Government with George Adams, August 18, 1845, for 1200 "U.S.N. and Anchor" flasks.

The firm of J. H. Batty and Company of Springfield, Mass., then entered the field and received numerous orders from the United States Government. Batty and Company made "peace" flasks of the design containing 20 stars arranged in an oval with the eagle facing right. Contracts for flasks with Batty appear under dates of October 4, 1847, Febru-

ary 11, 1849, January 28, 1850, September 27, 1850. In the later flasks the shape of the carrying rings was changed from triangular to round, and some of the earlier flasks were converted from the triangular to the round ring at the Watervliet Arsenal upon order dated September 24, 1850, issued to Col. R. L. Baker.

As to the early "bugle—U.S.—eagle" flasks (most often found marked with the Robert Dingee name), there were variations. Some had only the bugle. Some had the bugle and eagle, without the U.S. Some had the bugle and were marked "Public Property."

The Model 1841 percussion rifle (Mississippi or Yaeger type) was accompanied by "a copper powder flask, size 7 by 4 by 2 inches, holding half a pound of coarse powder and provided with two carrying rings." This size indicates it to be the 26-star peace flask manufactured by N. P. Ames between 1837 and 1846 or later.



Widespread use of metal powder flasks in military service came to an end by the time we approached the War between the States. Paper cartridges, linen cartridges and some metallic cartridges gained predominance in warfare. However, the manufacture of metal powder flasks for sporting arms continued for a number of years after the war. In the approximate 1820-1890 period of their manufacture thousands of metal powder flasks were sold to gun stores for the huntsmen of the time and issued with muzzle-loading pistols, rifles and shotguns. In the course of manufacture while copper and brass were predominant some pewter flasks were made. These were cheap and not very durable. A more substantial type was the heavy leather-covered flask, usually of English manufacture and is-




sued for shotguns, matching the leather shot pouches of the period. The rarer flask patterns are not easy to find today and they command a substantial price.

*The Powder Flask Book* by Ray Riling is a monumental work on this subject, now reprinted and available at a moderate price. The many illustrations are excellent and the text is more extensive and precise than can be found anywhere else.

As the gun progressed from muzzle-loaders to breechloaders, carrying flasks became obsolete. Attention now

turned to the various brands of gunpowder best suited to the particular cartridges to be loaded. Here again there is an interesting period for the collector. The old powder cans offer a wide variety of sizes, shapes and decoration; some are especially attractive in color and design.

There are no bothersome laws or restrictions on the collecting of empty powder containers; it is a fascinating field with an unlimited range of diversity, where an appreciation of history, art and ingenuity can find full expression. 

## THE PARIS GUN


(Continued from page 36)

forced, instead, to modify the largest cannon then available, a 15 inch naval rifle. Its huge breech would hold 300 pounds of propelling powder, but the barrel was not nearly long enough. To achieve the desired range of 70 miles, the shell would have to reach an altitude of 28 miles above the earth and that meant a muzzle velocity of 4,900 to 5,200 feet per second, a velocity almost double that of a standard military rifle. A long barrel and a small eight inch shell seemed to be the answer. The old 15 inch barrel was bored clean and a rifled tube 98.5 feet in length was inserted. Since this projected 42 feet beyond the original gun, a reinforcing band was shrunk around it. The final section of 19.7 feet was attached by threads and flanges at the firing site. The completed barrel, being relatively thin for its length, tended to droop under its own weight and a form of bridge suspension had to be added.

The shell, too, presented problems. Because the rifling in a barrel wears out very fast at high velocities, everything possible had to be done to reduce friction. The driving bands of each shell had the rifling grooves pre-cut into them and, to insure a tight fit for accuracy, each shell was progressively larger than the one before it. If shell number one was 8.00 inches, then number two might have been 8.01 inches and so forth. The shells were numbered and had to be fired in their proper sequence. To mistakenly load shell number four in place of number three, would certainly cause chamber pressures to skyrocket and that could be what happened to the Paris gun which mysteriously exploded.

A special railroad car with eighteen axles carried the gun into action and served as its firing cradle. By remov-

ing the wheel trucks, the whole car body could be lowered onto a platform like a railroad turntable. The turntable provided the means for traversing the gun left or right. Since it was designed to be fired only at an angle of 54 degrees—the best elevation for getting the shell out of the atmosphere quickly—range had to be corrected by varying the powder charge. The actual aiming was done by scientists in the crew. They had to calculate, among other things, the curvature and rotation of the earth. The difference between the flat map distance to Paris and the true curved distance averaged close to a mile. And once the shell left the atmosphere, the target tended to rotate away from it. Add to this the fact that temperature and humidity critically affect the burning rate of gun powder and it will be readily apparent that the gun's ability to hit Paris at all was no mean feat. Obviously, with Paris well behind Allied lines, it was impossible for the Germans to observe where the shells landed. The only way they had of learning what they had hit was by reading Swiss newspapers the following day.

Paris was sporadically under attack by the long ranged guns until August 9, 1918, when the Germans were forced into a general retreat. All in all, 367 shells had struck in or near the city, killing and injuring 876 people. Property damage was comparatively light. The guns had never been intended for demolition purposes and as terror weapons they had lost their effectiveness after the first two days. Had there been more of them and sooner, the story might have been different. History must now catalogue them along with the V-2 rocket of the Second World War as too little, too late. 

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(Continued from page 20)

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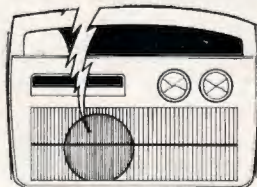
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Mr. Carmichel observed in his article, "... the purist may respond with outright resentment to the idea of anyone attempting to *improve* on the long, graceful, impeccably baroque lines of the Kentucky rifle." (Italics mine). Little does he know how very right he is! Resentment that borders on nausea at such a pot boiler as this, and the promotional impetus it gives to such rifles. Those who would buy such a rifle; indeed those who would make such a rifle for sale, cannot have any admiration or respect for the traditional old rifles of the past. They cannot know the joys and the frustrations of learning to shoot the old guns, to care for them, and honor them by knowing something of their history. Has his son ever been found studiously perusing a volume of history, just because he is the proud new owner of a rifle that just might have seen service at King's Mountain?

Those who would desire such a rifle as Mr. Carmichel describes can only be regarded in one light. With no love for a muzzle loading firearm, and presumably finding the slug loaded shotgun unsatisfactory, still they would leap at the opportunity to take advantage of an uncrowded deer season, while still fulfilling the letter of the law. The rifle is a muzzle loader; therefore it is legal. That is all that can be said in its defense. As a firearm, it is neither fish nor fowl. With none of the rapid fire characteristics of the breech loading gun, nor any of the historical significance of traditional muzzle loaders, it is a sorry example of what some sportsmen will turn to in an effort to horn in on the other fellow's game.

The article in question made much ado about these rifles selling for the modest cost of \$150.00 and up, depending on stock style and equipment. I would like to point out that there is nothing modest about \$150.00 for such a rifle. Numrich Arms has long advertised muzzle loading barrels of this length for well under twenty five dollars and stocks of this quality are available from a number of suppliers for less than fifteen bucks. The firing mechanism for these rifles has long been known among muzzle loaders as the cheapest, most easily constructed percussion firing method known. Such a device is often found on home built target pistols, that make no attempt at retaining authenticity. Any ma-

chinist can turn out such a device in a short time.

Another modern muzzle loading rifle, Numrich's Hopkins & Allen "Heritage" model, an underhammer arm, is mentioned here only as a price comparison. Selling as it does for less than \$100.00, the piece is light, accurate, and is a traditional type of firearm, albeit of a very late type. For those who wish to enter muzzle loading for the first time, it will serve admirably as a first gun. Numrich also sells a fullstock Pennsylvania style rifle that is completely traditional, for about \$175.00.

W. L. Mowrey Gun Works, Inc. of Olney, Texas, offers an Allen & Thurber replica for \$149.00. This .50 caliber, half stocked hunting and target arm is one of the very best modern made muzzle loading rifles, and is traditional in every respect. Bill Mowery makes a Hawken rifle kit that is equally fine in quality, and at an attractive price.

Dixie Gun Works, Inc., Union City, Tennessee, offers a line of modern made, traditionally styled rifles in several calibers, stock styles and price ranges. Both flint and percussion models are available.

The advertising pages of "Muzzle Blasts" magazine, the monthly organ of the National Muzzle Loading Rifle Association, carries advertising from a number of gunsmiths who specialize in building complete muzzle loading rifles or in supplying partially completed rifles in kit form. With this wealth of sources to choose from for a hunting rifle, there is no need, nor any excuse, for taking a valuable antique rifle into the woods on a deer hunt.

All of today's organized activities relating to muzzle loading have resulted from the common desire of the participants to preserve and promote a manly skill with these old rifles, and in so doing, preserve and protect the heritage that is part of these old guns. Any activity that is contrary to those ideals is not in the best interest of muzzle loading.

Mr. Carmichel's modern muzzle loaders are legal in the eyes of the law. I will give them that. As for their appearance, their ethics, their purposes, or their suitability for muzzle loading enthusiasts, I would laugh, were I not so sick to my stomach.





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## RADAR BULLET TRACER

(Continued from page 49)

projectile velocity.

Thus the sensor, to minimize or eliminate false alarms, must be sensitive to velocity. More specifically, it must be sensitive only to velocities in the range of approximately 600 fps to 4000 fps, the velocity range of most small-arms projectiles.

While a number of different techniques can be postulated for a velocity-sensitive sensor, perhaps the most practical at the present is a radar technique based on the Doppler effect, say the Cornell Laboratory engineers.

Doppler radar theory and technology are well known, and the components are readily available. It thus appears to offer the greatest hope for immediate success. Doppler radar

ured in units of square meters and called radar cross section. By examining the radar cross section of the bullets, the optimum frequency band and polarization can be established.

Comparing Figures 2 and 3, it can be seen that the nose-on radar cross section of the .50-caliber bullet is about two times larger at X-band than at K-band. From Figures 4 and 5 a similar relation is apparent for the .223-caliber bullet. For the .50-caliber data in Figure 3, it can be seen that the radar cross section using vertically polarized energy at K-band maintains at least half of its nose-on value for azimuth angles of about  $\pm 22$  degrees.

On the other hand, Figure 6 shows

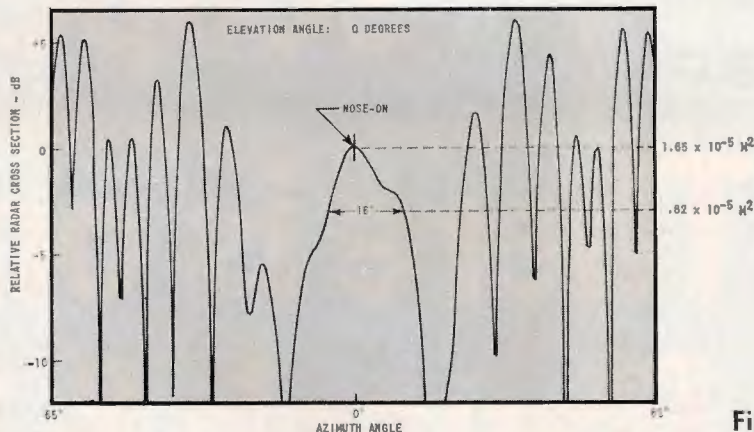


Figure 6

operates on the fundamental principle that the frequency of the radar signal reflected from a moving target differs from the frequency of the illuminating signal by an amount proportional to target velocity.

The effect is shown in Figure 1 and illustrates the fundamental basis of the gunfire detector. By placing a filter as shown by the crosshatching in the figure, only those frequencies arising from targets closing within the bounds of bullet velocities of +600 to +4000 feet per second are accepted. The returns from stationary targets (buildings, etc.) are rejected, as well as receding targets (-600 fps to -4000 fps) such as return fire from the enforcement team. In essence, the device will only detect true threats, or projectiles that are approaching the radar.

To implement the concept, a number of target characteristics and their relation to the system must be determined. The first, of course, is the radar reflectivity of the bullet meas-

that the radar cross section of the .50-caliber bullet using horizontally polarized energy at K-band falls below half of the nose-on value at about  $\pm 8$  degrees. A similar response will be evident at X-band as well. From these figures it can be seen that vertically polarized energy will be more reliable in detecting bullets, especially those that are not exactly directed towards the detection system. The data also indicate that a nominal radar cross section of  $10^{-5}$  square meters is characteristic of both .223- and .50-caliber projectiles. Since most other projectiles of interest lie between these two, this value can be considered as representative.

Finally, it can be concluded that the slightly higher cross section value, the decreased path loss, and the greater selection of available components at X-band will outweigh the advantage of compactness inherent in a K-band system.

(Continued on page 56)



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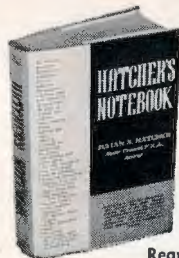
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(Continued from page 54)

Just as important as the radar cross-section characteristics of the bullets is the return associated with the stationary background of buildings, vehicles, etc. Measured data have shown that it has a maximum effective value of about 300 square meters for the system.

However, implementation for a useful system requires more information than just detection of a bullet in flight, say the engineers. The system also must determine and indicate the location of the sniper, and this in turn infers a range tracking function.

Figure 7 shows how the Doppler technique can be implemented with a range tracking feature. A stable CW (continuous wave) source is used for both the transmitted signal and a reference signal for the receiver. That portion proceeding to the transmitter is gated, or transformed into a pulse having the same carrier frequency as the source. The signal is then amplified in a traveling-wave tube and emitted from the antenna.

The other portion of the CW signal is fed into a single-sideband modulator, where an output signal is developed with a center frequency displaced from the original source frequency by 30 MHz.

Now a signal reflected from a stationary target sends back a frequency which is mixed with the original reference signal, forming a low-frequency signal which can be used to determine moving targets or stationary targets. A pulse then has been transmitted, been developed, and related to a time position corresponding to target range.

After amplification, return pulses are sorted into individual range channels. Since the target is moving, it must pass through one or more range positions sampled by the system. If a pulse is in a given channel, a target is in the range cell. Thus each channel is a narrow-band amplifier, with bandwidth corresponding to the required Doppler acceptance bandwidth.

By detecting the output of each channel, the position of the bullet can be recorded as it passes through each range cell and thus a trajectory track is obtained. *By extrapolation back along this track, sniper position can be found.* Only tracks of closing bullets will be recorded; receding bullets or stationary targets will be rejected by an amount proportional to filter rejection.

The display depicted in Figure 7 is a conventional plan position indicator (PPI) where azimuth bearing angle is given in degrees about the radar system. Note that five blips or detections



are indicated, with the farthest at about a 45 degree bearing angle. Assuming that each of the range gates is 100 feet in depth, the display would indicate the sniper's position at about 500 and 600 feet.

Depending on the bullet velocity and the antenna scan rate, it is possible that a high-velocity bullet would be detected in every other range cell and conversely, slower bullets from pistols or shotguns could be scanned by the antenna more than once in each range gate.

In the first case, the effect would be that the range accuracy would be

projectiles. Calculations based on these test results indicate that a mobile sniper system capable of 1,000 foot detection in an urban environment is compatible with the power and space available in a normal patrol car.

The Cornell engineers discussed a more complete system for sniper detection to illustrate several situations other than the riot environment where the basic systems or variations of it could be utilized. Radar detection of a sniper's bullet and its origin are only partial solutions to the problem facing the law enforcement community, say Cornell engineers.

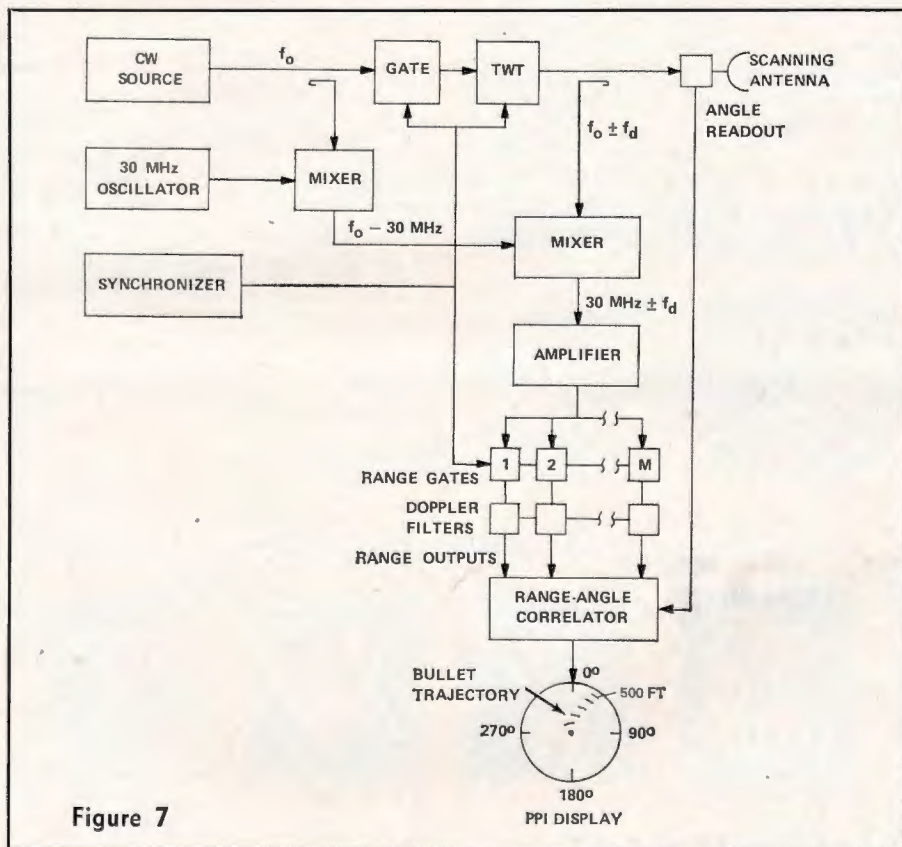


Figure 7

reduced. In both cases, it would be possible, by observing the number of directions per range cell, to estimate the type of weapon being fired. Figure 8 illustrates the radar mounted on an armored car. The antenna is scanning through 360 degrees in azimuth many times a second and elevation coverage will include the nearby roof tops.

A system similar to the one just described has been built by Cornell Aeronautical Laboratory and has completed preliminary field tests. In these tests, the gunner was hidden in heavy foliage located on rolling terrain. Results have been extremely encouraging, with detections obtained on 20-gauge shotgun slugs, No. 6 birdshot fired from the same weapon, .22-caliber long rifle, and 7.62-mm NATO

The system should incorporate a capability to quickly apprehend or silence the sniper and to provide evidence needed for successful prosecution.

To accomplish the first of these objectives, the azimuth and range readout of the Doppler system could be used to automatically broadcast commands, giving the bearing and range of the sniper with the radar-carrying vehicle as the coordinate reference, in a tone-coded format to law enforcement personnel via personal radio receivers.

For example, if detection of a sniper was made at 45 degrees clockwise with respect to the vehicle center line and at a range of 500 feet, the code might be one long tone to signify the first quadrant followed by 5 short

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tone bursts to signify the range. A tone-coded format is envisioned here to assure that the message can preempt any voice traffic on the frequency and thus shorten the reaction time to permit the force to take defensive positions and to direct the officers towards the sniper. Once priority has been established on the channel, conventional voice control of the force could be assumed by the operator of the radar unit to provide more precision in directing the supporting personnel.

The second objective that might be achieved by a complete detection system is to provide evidence for prosecution. This can be realized by means of a camera/strobe light arrangement that would automatically turn to the detected azimuth of the sniper's position and then photograph the sniper. The camera would be programmed to make sequential photographs of several perspectives of the sniper and thus provide positive identification of the suspect.

"There are two related applications of the same concepts," point out Wohlers and Ruda. "The first and most logical is the use of the sniper detection system as part of a motorcade for a V.I.P. This application is

similar in many respects to the riot situation, since the radar would again be mounted on a vehicle and the assassin may be located anywhere from ten feet away to 1000 feet away.

"Unlike the riot situation, however, the V.I.P. will probably be the only target and this condition suggests the use of bulletproof panels for physical protection. One possibility is the use of counterbalanced pneumatically actuated panels which can be raised to full height in 0.1 second, which would give protection from an assassin 300 feet away and using a weapon that has an average bullet velocity of 3000 feet per second."

The second application, protecting a V.I.P. at a lectern, would permit some simplification of the basic system since, in a confined area such as an auditorium, the range function and scanning antenna are probably not required. In both of these applications, say the Cornell Lab engineers, there is a good possibility that the V.I.P. can be protected by manipulating protective glass shields in time to deflect the first shot of slower projectiles and certainly the second shot from any high velocity weapon.

### The Guns Magazine



Nonte  
Handloading



Braverman  
Modern Arms



Mandel  
Antique Arms



Schumaker  
Gunsmithing

## Panel of Experts

### Nitro Express Ammo

I have a .600 Nitro Express double rifle bought in England before the war. It is liberally engraved and has a dead elephant and hunter figure inset in silver. On the barrel it is dated "1931", plus the calibre designation. Can I get some ammunition for this fine firearm?

William H. Etheridge  
Wilson, N.C.

Ammunition for your gun was made as recently as 1962 in England, but I feel that it is no longer available. It was never a popular caliber,

so the cartridges are probably quite scarce. If you feel that you must have them, a few might be found in the hands of English gunsmiths. As the gun was designed for killing elephants, you might have difficulty finding something to shoot at! Value would depend on its type, maker, grade, and condition, from as low as \$35 all the way up.—S.B.

### Beals Breech-Loading Rifle

I have a single shot rifle I believe to be of .32 caliber. The frame is brass as



is the butt plate. Marked on the top of the barrel is Beals Patent June 28, 1864-Jan. 30, 1866, E. Remington & Sons. When pulling down on the trigger guard, the entire barrel slides forward exposing the breech for loading. Please tell me anything you can about this rifle.

Leonard Hampe  
Florissant, Mo.

*Your Remington made Beals rifle is one of Remington's rarest in the long arm field. Though I have not seen many sold in the last few years I would estimate its value to the Remington collector to at least a \$300.00 figure, if in excellent condition.—R.M.*

### Quality Octagon Barrel

I would like to know if it is possible to get an octagon barrel, with as good a name for accuracy as perhaps Douglas, for a M98 Mauser action, chambered for popular calibers such as .30-06, 7 mm Rem. Mag., or for that matter any caliber used for deer, bear or elk.

How much would such a barrel cost and where can I get one?

Thomas Dougherty  
Seattle, Washington

*I can't find any definite information on the availability of octagon barrels for big center fire rifles. G. R. Douglas makes octagon muzzle loading barrels but these are for black powder use ONLY. Numrich Arms Co., West Hurley, N.Y. also makes muzzle loading barrels, which likewise are probably not suitable for the high pressure center fire rifles. Flaigs, Millvale, Pa., imports many arms and I seem to recall some literature on half-octagon barrels. You might contact them and some of the barrel-makers. Such an item would probably be a special order and the cost would be somewhat on the high side. Beyond appearance, there is of course no advantage to an octagon barrel.—W.S.,*

### .45 ACP Loads

Please send me some reloading information for the .45 auto cartridge. I want to know if there are any possible safe loads that can give a 190 grain bullet a 1200 fps velocity from a six-inch barrel?

Charles D. Haynes  
Elgin AFB, Florida

*The velocity you seek in .45 ACP can be closely approached in a revolver (Continued on page 69)*

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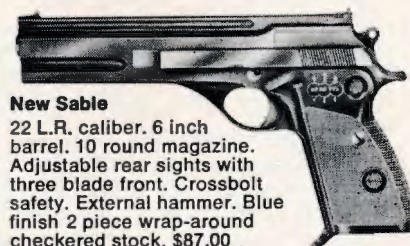
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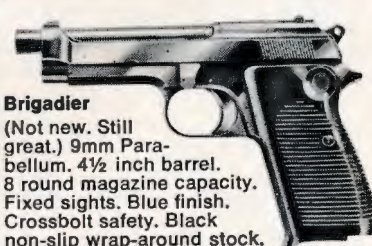
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## SHOTGUN SIGHTS

(Continued from page 31)

it! The rib is lightly grooved its entire length to dampen sun glare, and has two sights. The rib was an instant success with trap shooters. It is found only on their over-under trap gun. Ordinarily the superposed model has a rib or  $\frac{5}{16}$ "", like most other shotguns. The 20, 28, and .410 in the O/U has a rib only  $\frac{1}{4}$ " in width. Once Browning made solid raised ribs. These are alright except if the gunner fires a lot of shots in a short time, as when knocking out a hundred targets at trap or skeet. Then the raised solid rib heats up badly and distorts the target because of the mirage which dances along the top of the rib. The raised ventilated job will not do this. The heat is dissipated and there is no distortion.

In the sights equation nothing is more important than the raised rib. It will help anybody. It does not matter whether he is the rankest dub or the slickest of experts, the rib is a boost. It makes the aim easier, more accurate and more constant. And this applies regardless of what kind of shooting the gunner may be doing—and regardless of what kind of game. If your wing gunning has been on the low side this past season give a lot of consideration to the installation of a raised ventilated rib on your favorite smoothbore. It is bound to help your game.

Good though the rib is, a critical factor in its goodness is the fit or the stock to the shooter. For while the rib has two sights on it, neither is really a rear sight. The comb height determines where the shooter places his eye, and this aiming eye acts as the rear sight. If it is not in the same position every shot then the gun will vary its charge up and down. A high comb means a high shooting gun because the eye is held higher; a lower comb, in which the gunner looks down the rib just as tho he was shooting a rifle, means a low-shooting piece. What the shotgun really needed is some kind of a rear sight. An aperture, maybe, like the micrometered peep sights found on our rifles. More on these peeps later.

Bill Weaver, the celebrated scope maker tried to resolve that one thirty years ago. He developed a scope that was a 1X. It had no magnification, but it did have a walloping big field of view. Bill put a coarse crosshair in the scope and then attached it to a Model 12 pump gun. He got so he could shoot the gun very well. But I

never did. You could look through the glass with both eyes open and the field was sufficient so that you could lead a target—but the whole scheme, so far as I was concerned, was slow and cumbersome.

My father, Major Charles Askins, our ranking shotgun authority for a great many years, one time attached a simple peep sight to the top lever on his favorite Ithaca double gun. The peep was a big one,  $\frac{5}{8}$ "", and the outer rim of the aperture was quite thin, so he could not only look through the peep but also see around it quite readily. He claimed the device was worthwhile. It resolved all his elevation problems and helped him to hit better. I tried it and found I never saw the aperture at all. I suppose I looked through it but if I did I was not aware of it.

The facts are that a shotgun is handled so speedily that we have to depend on proper comb height to govern our aim. If the comb has a good dimension we'll place the shotload on the target and there will be no problems of elevation.

This is not to say there isn't a legitimate place in the shotgunning scheme for not only a scope sight but also for a receiver iron sight. There certainly is. But I don't think it's on a bird shooting gun. The rear sight has a proper place on the slug-throwing scattergun. The gun for deer and other big game.

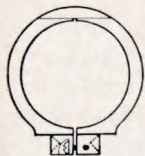
These days virtually all the big manufacturers provide special slug barrels for their more popular models. These tubes are usually shorter than standard and are equipped with an adjustable open notch rear sight and a post front on a low ramp.

The regulation shotgun barrel for wildfowl or uplands game has its tiny front bead. If the gun has a rib it may have two beads, as we have commented. If you try to hunt deer and use slug loads with this combo you'll miss a lot of game because the sighting arrangement, while okay for the shot pattern, is simply too sketchy for the single ball. The gun has to have some kind of a rear sight.

If, however, you put on a peep sight, you then discover that the spindly little bead in front is wholly inadequate. It is too small and too low; hard to see, and slow. What you need is the special slug-throwing barrel as offered by the manufacturers these days. It has a ramp in front and atop this ramp a post sight. This is quick



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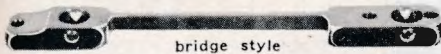


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and easy to pick up. The open notch rear on these barrels is adequate for the shooter with 20/20 vision, but for better sighting, a receiver sight with its aperture close to the marksman's eye is much better.

There are some excellent receiver peep sights for shotguns. One of these is the Williams 5D model. It is a simple sight, quite sturdy and easily mounted. Another good one is the Redfield Record model receiver sight. It, like the Williams 5D, has a walloping big aperture and is easily aligned. Both can be brought to zero and locked there, and by their use increase the hit probabilities on a white-tail beyond 40 yards several times.

An even better big game sighting combination on the repeating scattergun, however, is the low powered scope. The scope on a shotgun is somewhat like the scope on a rifle. It makes the gunner a better marksman, increases his potential to bag his game, squeezes all the accuracy inherent in gun and load out or both, and permits the huntsman to look his head over before firing. The scope can be mounted on the bird gun and used with slugs and afterward easily removed for the bird shooting.

While Weaver made a glass with no magnification, a 1X, he has since put some power in this scope. It is now a 1.5X. This is an improvement, but it did reduce the field somewhat. It is now 56 feet at 100 yards. The facts are any scope of a magnification up to 2¾X works excellently on the shotgun. The receiver must be tapped and drilled by a competent gunsmith and the mount should be a sturdy one. The recoil of the 12 gauge with slugs is considerable, close to 30 lbs., and for this reason the scope should be of reliable make, and the mount as well. The scope should have either very coarse crosshairs or a post with taper top and a single horizontal crosswire to prevent canting. The gun should be sighted in for 50 yards. At this range the slugs will group into 4-5 inches.

The scope is of little use on the double barrel gun, whether side-by-side or over/under. Neither is the aperture sight. This for the reason that the doubles are adjusted to put the shot charge from either barrel to a common center at 40 yards.

The shotgun sight is a vital accessory on the scattergun whether it is a straight out bird gun or is a specialized piece like the slugthrower. The sight can contribute to a high percentage of kills or it can account for a lot of missing. Be sure your favorite smooth-bore has those sights that will provide all the help toward making your shooting top drawer.



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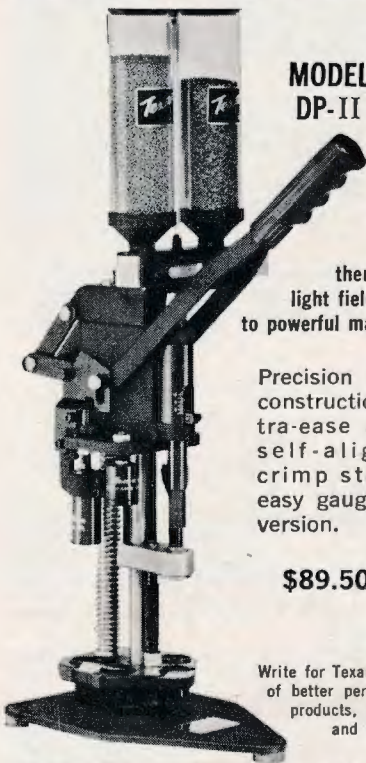
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## HUNTING A TROPHY

(Continued from page 33)

scrawny A good five point elk, with heavy beams and long points is a much better trophy than a seven or eight point one with short tines and a small beam.

Back in the days when there were a great many more good six point elk to choose from, I had a hunter who came elk hunting for nine consecutive years. His first elk was a medium size 6 point, with beautiful ivory colored tips on the points, several inches in length. It was also a very symmetrical set of antlers and he had the head mounted for his den. After this hunt he said he intended to hunt for a good eating type elk only, unless he should happen to find a real buster that he felt he couldn't pass up. His hunts each year became pleasure trips for him, just to get away from the city and his work, but each year he took home his elk. One day, in his ninth year of hunting elk, as we were returning from a long pack trip to a fishing camp and were on our way to the elk hunting camp, we heard the deep beautiful bugle of a mature bull elk coming from across the creek ahead of us. We rode out into a small clearing and there he was with his harem. The hunter acted fast, sliding off his horse and taking his .270 Improved Winchester from the scabbard almost in one motion. One shot and the bull went down; an extremely large animal both in body and in antler size. Long and beautifully proportioned, heavy in the beam and with a wide spread and six excellent points to each side, it was one of the best elk heads I have ever seen. But, believe it or not, after we skinned and caped him out and got him back to the ranch the hunter gave it away to a fellow hunter. His very first elk was and still is his favorite "trophy."

If a man is dedicated to hunting for the record book, he must have lot of time to spend on his hunts and plan on covering a great deal of country. Although it is quite possible to luck into one or two record type animals, most of these are obtained by planning your hunt for the best areas for the particular animal to be

hunted, allowing plenty of time for the hunt and looking over a great many head before killing one. Most all hunters that have a number of record heads to their credit are: better than average shots; good hunters; have traveled and hunted in a lot of different hunting areas; and are in quite good physical condition.

Stories in the outdoor and sporting magazines also lead hunters to believe that all you have to do is go hunting to collect a record trophy. So many of these deal only with the biggest or meanest or best animal killed on each hunting trip. No one seems to want to write about the times they have come back empty handed, even if they did have one of the nicest hunts they were ever on, as to weather, companions or game sighted. For that matter, I don't suppose many readers want to read about this kind of hunt. Prospective hunters want to hear about game killed and see pictures of it. However, good outfitters feel that they have failed badly, in some way, if the hunter that has booked a hunt with them, goes home feeling as though he didn't have a good time, just because he didn't get a record book animal. They try mighty hard to see that every hunter—even if he is only a mediocre shot, in poor physical condition, and lacks time enough for a good hunt—gets a chance at game.

Two of the best and most experienced hunters I know are Jack O'Connor of "Outdoor Life" and Warren Page of "Field and Stream." I know both have had a number of dry hauls on 30-day hunting trips and I have hunted with both of them when they have gotten their game the first day of a planned ten to fourteen day hunt. This is evidence that being good doesn't necessarily mean you can always collect a trophy. Sometimes the long hunt proves to be a dud and the short one is productive. However, any experienced hunter will plan on enough time, depending on areas and weather conditions, to have a good chance at the game he is after. It is really the surest way to bring home a trophy.

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Last year, a long time friend of ours drew a permit for a Big Horn sheep. He had just retired as an airline pilot and had plenty of time to spend. We planned to take all the time we wanted for this hunt because on two previous sheep hunts he had come out too late for one, and the weather had stopped us on the second one. This one would be right as to weather and time. After a 5 a.m. breakfast, opening day, we saddled up and rode from our sheep camp, at about the 9,000 foot level, toward the sheep country, at the 11,000 to 13,000 foot level. We picketed the horses almost at the top and then climbed the rest of the way on foot. We topped out at 12,300, because I wanted to hunt from above, not below, any game we might see. We located six rams in good shooting distance (300 yards), at 8:30 a.m. and with one well placed shot Breezy had his Big Horn. This hunt certainly made up for those other two.

Five years ago, another sheep hunt I was on had quite a different ending. I was after a desert ram, in Baja, California. There was only a ten day season. I don't believe I have ever hunted harder, and in poorer conditions in my life, but on the ninth day I had still seen nothing but tracks. At 2 p.m. on the last day I finally got a shot and it was 11 p.m. that night when I got into the rancho. So this was one hunt when I needed every minute allotted.

Neither of these Big Horn sheep, the one Breezy got so easily or the one I got the hard way, could be classed as trophy heads, or heads for the record book. However, to us they are two of our finest "trophies." Breezy's, because after two miserable failures, he connected so easily; and mine, because I hunted so hard for it. This is what makes a "trophy", to my way of thinking.

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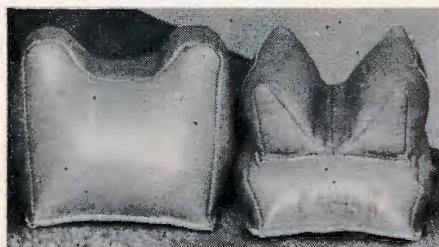
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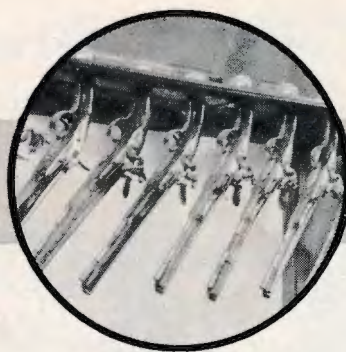
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## GUN RACK

### Weatherby Mark XXII

The most handsome of all the .22 plinking rifles is the Weatherby Mark XXII. With commendable design ability this latest Weatherby was made to look surprisingly like the highpowered Mark V rifle. Manufactured in Italy the XXII has a 4X scope with integral mount which goes with it. The scope is also designated the Mk XXII, it is made in Japan.

The rifle is a .22 long rifle, with either a 5-shot or 10-shot detachable clip-type magazine. It is blowback operated and has a novel cutoff lever so that it may be fired as an automatic or as a single shot. This feature makes it considerably safer when it the hands of a tyro marksman. The 24-inch light sporting barrel has six lands and grooves, RH twist, one turn in sixteen inches. There is a graceful front sight ramp and gold bead. The rear sight is a series of leaf sights, the first for 50 yards, second 75 yards and third for 100. The handsome Weatherby stock has a comb height for the iron sight line.

The receiver is clean, good-looking and streamlined. It manages to con-



vey the thought that it is the little brother of the Mark V big bore. It is made of a light-weight alloy, is grooved on top to accept the Mk XXII scope, and contains a through bolt that is removed to take the barreled action out of the stock. The breechblock is engine-turned, contains the firing pin and a big husky extractor, the face is countersunk to accept the rimmed cartridge.

The most appealing part of the Weatherby is the stock. It manages to be every inch the typical Weatherby furniture. It is quite pretty, with a selected grade of European walnut, some mouth-watering skip-line checkering by Italian artisans, a

Monte Carlo and comfortable cheek-piece, together with a Rosewood fore-end tip and a similar piece at the pistol grip and an ivory diamond inlay. The buttplate is covered with a hard rubber pad. The stock has a 13½" length or pull and a comb that is too low for the scope. It is okay for the iron sights but hardly straight enough for the glass sight. There are swivels for a ¾" sling but the leather is not provided.

Despite its weight of only 6 lb., 10 oz. with scope this is a man's rifle. The stock is made for the adult and the gun has a reach from pistol grip to trigger for the grown up. As a hunting and plinking gun it is as good as the discriminating marksman will ever find.

The Mark XXII scope with its integral mount, fastens to the grooved top of the receiver with two Allen screws, this permits a 2" latitude in positioning the glass. The scope has a field at 100 yards of 25 feet, the tube diameter is 7/8", the reticle is a fine crosshair which subtends only 1" at 100 yards. Relative brightness is given at 50, and all adjustments are internal. These are audible clicks and are graduated to ½ minutes of movement. Japanese made, the Mk XXII is a high quality optical piece.

Four hundred shots with a miscellany of ammunition, some of it high speed, some regular velocity, and mixed as to Winchester, Herter, CIL, Federal and Remington, saw the rifle never miss a stutter. It was not cleaned. Both the 5-shot and the 10-shot magazines were used and the rifle was turned upside down, fired straight up and straight downward, on its side and without support at the buttstock. It handles both hot high velocity and regular speed cartridges without difference. Tried with .22 Shorts it would not eject. Ditto with .22 Long cartridges.

Shot off a benchrest at 50 yards, with Winchester Super Speed hollow point, 10 groups of 10 shots each had a 10-shot average of 1.78" total



spread. This is not a target rifle and Super Speed is not a target load. This is good hunting rifle accuracy. The trigger pull was rough, weighed 4½ pounds, and cannot be adjusted which tended to spread groups somewhat.

This is a very high quality rifle. It has lots of good looks, handles smoothly and effectively, and is extremely reliable as to operation.

Col. Charles Askins.

### Mark X M98 Action

While attending the National Rifle Association Convention in Washington, D.C., last Spring, we had an opportunity to rather closely examine the new Mark X M98-type Mauser Action currently being sold by Interarms at the rather appealing price of \$55. It follows the military M98 design almost precisely, with the following exceptions: The receiver bridge is smooth, without the clip guide hump and slots; the bolt sleeve does not contain the large boss into which the military-style safety fits; instead a sliding safety is fitted at the right receiver tang and engages sear and trigger directly; the trigger guard/



magazine is fitted with a hinged floor plate secured by a pivoted latch let into the front of the guard bow. The trigger/sear assembly is a single-stage version of the military style so familiar to most of us.

Generally speaking, all parts that would normally be exposed are nicely polished and blued. The bolt body and extractor are polished bright, but the bolt handle is blued. Functioning, as near as could be determined from repeated manipulation of the naked action, was quite good. The action is supplied, incidentally, with a rear guard screw bushing which serves an excellent purpose, and should not be discarded as many do when stocking any M98-type Mauser. Your dealer should be able to obtain the new Mark X Action from Interarms without difficulty. Maj. George C. Nonte

prized possession. I took it away from a smuggler on the Rio Grande one night a long time ago. He had no more use for it. Indeed he had no more use for anything mortal. During the passage of the years, and a great many moves, the stock was badly broken at the pistol grip. I patched this stock using Bisonite rifle bedding compound. It works just as well as a stock repair item as it does in bedding.

I did not bother to take the stock out of the action. The break was so far back this was not necessary. I carefully cleaned the break with car-



bon tet and then permitted it to dry for 48 hours. After that using the measuring cup which is provided in the Bisonite kit, I mixed 7 parts of R1-88B, the bedding compound to 1 part of Bisonite hardener. Now ordinarily with any bedding compound you have to work fast or else the mix will commence to set up on you. This doesn't happen with Bosonite. It takes a full 40 minutes to harden which gives you plenty of time to work with it.

The two broken parts of the stock were liberally doused with the compound. It was worked into the cracks and fissures of the break and then the stock was fitted back together again. When the two pieces were in place quite securely, I placed a wood clamp on the stock. I then used a spatula provided in the kit to wipe off the excess compound. I then set the gun away for 48 hours. When I examined it the weld was as strong as originally. I sanded down the edges of the break, removing the excess Bisonite compound and after that gave the pistol-grip a series of treatments with Bisonite stock wax. The gun is now as good as ever and the break is scarcely noticeable at all. Col. Charles Askins.

### Ralph Bone Knife

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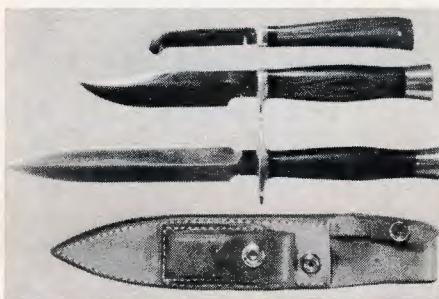
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of the excess patch material will produce some deleterious effect on accuracy. After trimming, the ball should be perfectly centered in the patch. But, that condition will not be obtained if you hack the patching off with a dull kitchen knife.

With the ball seated just below the muzzle, the excess patch material is pinched up close and a very sharp knife slid across the face of the muzzle, slicing it off. The knife must be very sharp to avoid leaving ragged edges and tags of patch. Control of the cut is facilitated if all the bevel is on one side of the blade leaving the other flat to lay solidly on the muzzle face. The patch knife just made to my specifications by the Ralph Bone Co. (806 Ave. J, Lubbock, Texas, 79401) meets all these requirements and does the job beautifully. In addition to the



blade being beveled on one side only and stropped to a shaving edge, it has a recurved safety tip so there is no point exposed to cut something or somebody. The blade is 3" long, overall length is a hair over 7" with a substantial Rosewood handle drilled for a carrying thong.

Over the years, I've used everything from a safety razor blade to a surgeon's scalpel for trimming patches, but this is the best tool I've found to date. Ralph Bone is now cataloging this new patch knife at \$12. If you've a really fancy rifle that can't bear to have its patch trimmed with an ordinary knife, then there is a silver-mounted, staghorn-handled version at \$20.

Other Bone knives are made in a wide variety of styles and sizes ranging from small curved skinning blades up through conventional general purpose designs to big Bowies and serious fighting knives. I've examined and used several samples and haven't yet encountered one that wouldn't give me a pretty fair shave, even after being used to slice up several sheets of paper. And it is a well known fact that paper takes off the edge pronto if a blade isn't up to snuff. My favorites thus far are the Model L with 5" clipped point blade for hunting use and the Model B of modified traditional "Arkansas Toothpick" double-edge blade form. A cat-

alog is available and prices range from that of the patch knife upward with the popular models in the \$30-\$40 range. Excellent knives!

Maj. George C. Nonte

### Hume Corfam Holster

Leather is the traditional material for handgun holsters, not only for civilian use, but for military and police establishments as well. Sure, there have been a number of attempts to use heavy canvas and the like; but they were usually military in nature because of material shortages or special problems that couldn't be met by leather. Dozens of times, various entrepreneurs have manufactured holsters of plastic, metal, wire, etc. None of them ever quite made the grade insofar as public acceptance was concerned. It isn't that other materials won't work—some are considerably more durable than leather, and a good many are better where other factors are concerned. Leather—good quality leather—is closely associated with personal sidearms. Even aficionados who can't reason why won't often accept any other material in their scabbards.

Leather does have its disadvantages especially where hard, day-by-day service encountered in police work is concerned. The biggest of these is its requirement for continuous maintenance. It scuffs and mars easily, snags and scrapes, and requires attention in the form of wax, polish, cleaning and general refurbishing. This attention is required at least weekly if the holster is in continuous service. The fellow who said a good holster will last a lifetime never carried the same one for very long. Using the same rig every day, as a working patrolman will, in all kinds of weather, will make a limp sack out of it in a year.

Consequently, when Don Hume told us he had new outfits made from laminated leather and Corfam, we were much interested. To eliminate the problems encountered in keeping the outside of holsters and belts looking good, Don has laminated a thin layer of DuPont Corfam over regular holster leather. The Corfam resists abrasion, scratches, and snagging remarkably well. In addition, it retains its gloss and color without any care other than wiping it clean occasionally. It is also water-resistant, greatly reducing leather damage from wetting that is bound to occur now and then. In short, the Corfam laminate provides an almost indestructible overcoat for the leather; yet, it allows the major



advantages of leather to be retained for the basic construction.

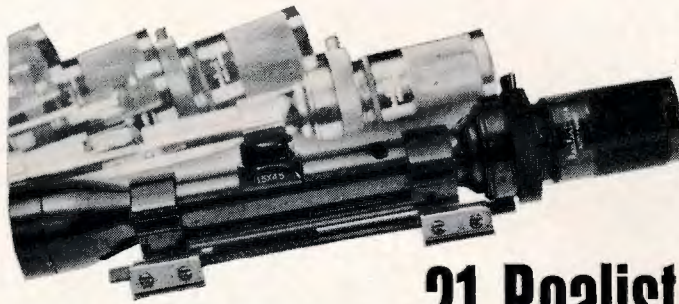
Hume is now producing laminated belts and holsters on a limited scale in police styles, and we have been working with a sample rig. Aesthetically, it is not as pleasing to some eyes as bare leather, but police officers we have shown it to are much impressed with the gleaming finish that seems to resist everything but deliberate attempts to destroy it. The only practical objection we have come up with thus far is that the layer of Corfam resists blocking to a degree. While it can be blocked under heat and pressure at the factory, you can't reblock the Corfam-coated leather to fit your particular gun more closely. The Corfam resists deformation well enough that it prevents further reshaping of the leather beneath. However, that shouldn't present any real problem for average police use for holsters that are delivered correctly fitted to the gun. Only a real handgun buff will find any need for alterations. And, just think of all the hours that won't have to be spent polishing, waxing, and boning!

Maj. George C. Nonte

### Winchester Air Rifle

Shooting the new Winchester Model 333 air rifle has been an exhilarating experience! The accuracy of this rifle is a never ending source of joy to me. It will place all its .177 match pellets into the same hole at the regulation distance of 10 meters (33 ft). The 8-oz trigger pull ideally suits the rifle to offhand practice which is precisely what it is designed to do. The 9½ pounds of weight plus the high comb and cheekpiece, together with the adjustable rubber buttplate, makes the 333 quite comfortable and steady for the standing position.

The Winchester has an 18-inch barrel, is the break-open type, that is the barrel is hinged at the rear and by the release of a lever latch is swung downward to cock. The effort is negligible and serves to retract the operating spring. When the trigger is pressed this spring is released and drives forward carrying a plunger with it which compresses the air and drives the .177 cal pellet down the bore. At the opposite end of the driving spring is another piston which moves backward at the time the rifle is fired. This counteracts the vibration set up by the driving spring. Thus the rifle develops no recoil. This is exceedingly important in the high precision air gun. It must be utterly with-



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out any vibratory node if it is to perform as a target arm. The Model 333 is exceptionally quiet.

The rear sight is detachable. It fits onto a ramp and has an allowable movement of 2 inches forward or back. This sight is a finely made micrometered affair, movable for elevation and deflection. Adjustments are 1/8 MOA which is about as fine as you can get. The front sight is a hooded aperture, 3.5 mm in diameter. There are bead and post inserts, as well, but these have little application to the target marksman.

The stock has 13 3/8 inches length of pull, a pistol grip for a man and a grooved thumb hollow. The grip is checkered on the sides and grooved down its front surfaces. The forestock is a bulbous affair not meant to be gripped. The rifle in the offhand is supported by the outstretched fingers and the thumb. The latter rests on the bottom side of the trigger guard. The trigger, as the 333 came to me from the factory weighed 8 oz, it is adjustable by a handy screw which can be reached through a hole drilled in the



trigger guard. Adjustments range from 3 oz to 2 1/4 pounds.

The barrel has a sleeve over it which is added simply for weight and balance. It is readily removable. This sleeve weighs 14 oz. It is better left in place.

Air rifle match shooting has now gained national stature. It is recognized by the NRA and is fired at the biannual World Matches. For the fellow who simply wants to keep his hand in at the difficult offhand, this rifle is the best answer!

Col. Charles Askins.

## S&W SCHOFIELD REVOLVER

(Continued from page 39)

endeavors to perfect the revolver, Lt. Col. Schofield in final desperation took his own life with one of the 1st Model Schofields that he loved dearly.

In accordance with the documents, the New York Herald for December 19, 1882 in the obituary column read:

"Lieutenant Colonel George W. Schofield, Sixth Cavalry, and brother of Major General Schofield, Commanding the Division of the Pacific, committed suicide at Fort Apache, A.T., at daybreak on Sunday morning in his room. His servant was in the room building a fire, and Lt. Col. Schofield was at the washstand combing his attractive hair. He turned and asked his servant to leave the room, and he had barely left and closed the door when a shot was fired. He had been crazed for eight days or ten over some invention, (presumed to be that of his revolver), and it is supposed that in his moment of insanity he

shot himself."

A word to the collectors: Never has there been a revolver that can offer so much for so little. Regarding present values, a detailed study was made by computerizing the prominent dealer's offerings and gun show prices over the past 12 years. Findings indicate that from 1956 to 1966 any Schofield, either Model 1 or 2, in one piece, with readable markings and unaltered would bring \$65, however during 1967 thru the forepart of 1969 the low limit has risen to \$75. The 1st Model seems to command about a \$10 premium over the 2nd Model, condition being equal. "U.S." markings seem to be the most preferred and the nickel finish in either model. The upper limit of value, based on 100% original finish is about \$250. Indications are that models above average are rising from a lower value to a greater value, contingent to small percentages of re-maintaining finish.



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## QUESTIONS & ANSWERS

(Continued from page 59)

ver, but would be too hot for the auto. I've blown cases out the feed ramp cut a couple of times trying to work up real hot loads for the auto. Try 8.0 grains of Hercules Unique powder, with bullets cast quite hard and sized to not more than .001" over groove diameter of your particular barrel. Crimp the case mouth heavily on the bullet. This load is not maximum in a good S & W or Colt revolver chambered for the .45 ACP cartridge and can—if you're careful and watch for pressure signs—be increased to as much as 9.0 grains. The 8.0 grain load will produce approximately 1075 to 1100 fps.—G.N.

### Convert A P-38?

Not long ago I purchased a prewar Walther P-38 and find that it needs a new barrel as the old one is very pitted and the chamber worn and enlarged to the point that cases bulge near the base upon firing. The weapon is otherwise fine. With this background information, I would like to ask a few questions.

First, what problems would I face in converting my P-38 to the .38 Super caliber? Next, Do you consider it practical from the standpoints of cost and weapon dependability? Finally, where can I obtain a new barrel or parts necessary for the conversion?

Private Theo. Rasmussen  
Livermore, California

Walther P-38's (commercial version), are being manufactured in Germany and imported by Interarmco Limited, 10 Prince St., Alexandria, Virginia. A parts booklet is available from them and many of the currently made parts will interchange with the military P-38's. They show only the standard length barrel. I doubt that your idea of converting it to a .38 Super cartridge could be worked out—at least not from any practical standpoint. You will note the barrel has some quite elaborate milling in the slide and locking areas. The Super .38 is a good  $\frac{1}{2}$ " longer, and while I don't have a P-38 to make a positive check, it is doubtful if the longer cartridge will fit into the magazine. Your best decision would be to contact the importer and get the worn barrel replaced.—W.S.

### U.S. .303 Blanks

I have found some cartridges in the

desert that are .303 British with the headstamp of "Rem-UMC" and crimped in the standard British style. Instead of regular blank powder, they contain a filler that burns green or red. I found these and some .30-06 belted ball and blank ammo in an abandoned gunnery range used by the Navy during WWII. What were the .303's intended for?

Grant Cunningham  
Spring Valley, Calif

When WWII broke out, the U.S. Navy still possessed a number of .303 British Lewis machineguns. These were used for light anti-aircraft training. This could well account for the .303 cases and ammunition that you found in a wartime training area. I do not know of any specific intent for any .303 cartridge to produce a colored flash. I suspect that the different colored flames produced by these cartridges is strictly coincidental.—G.N.

### Gunsmithing Schools

I am now in Viet Nam but will return home soon and would like to get into the field of gunsmithing. What schools do you recommend? I have had a course in Unit Armorer while in the Army and I am very interested in weapons and weapon repair.

Sp 5 Ronald G. Tippen  
APO San Francisco

#### Gunsmithing Schools Are:

Colorado School of Trades, 1545 Hoyt, Denver, Colo.—80215; Lassen Junior College, 11100 Main St., Susanville, Calif.—96130; Oregon Technical Institute, Klamath Falls, Ore.—97601; Penn. Gunsmith School, 812 Ohio River Blvd., Pittsburgh, Pa.—15202; Trinidad State Junior College, Trinidad, Colo.—81082

I wish to be frank with you. Gunsmithing is a tough trade, any way you look at it!! There are long, endless hours of application and learning, and you can never learn it all. There will always be guns you can not repair, yet customers feel you should, and



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may consider you incompetent if you can't. The monetary rewards are for the most part meager.

If you choose this route, knowing full well the bean pot may not always be full, I might suggest one of the schools,—then a good machinist's trade school, or tool and die maker's school. This equips you with a trade that is in demand and will always be a means of employment and making a living. Then, take up the gun work on the side, and feel your way along. A good sporting goods retail business works in nicely with gunsmithing, the former, being the bread and butter end of the business,—and of course the repairs and gun work add to it.

I was in armament during WWII, and became interested in gunsmithing, to the extent I gave up a 14-year newspaper experience and job. I'm still not making the money I could be making had I remained in the newspaper business,—but I do enjoy most of it.—W.S.

## Remington Double Derringer

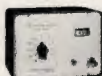
I am in the possession of a double barrel Derringer, Caliber .41 rimfire with the markings "Remington Arms Co., Illion. N.Y." and serial No. 732 The gun is in extremely good condition and original throughout apart from a new trigger which, however, is identical to the original trigger.

I would very much appreciate it if you could inform me of the approximate fabrication date and value of this gun. About 6 months ago I wrote to Remington Arms Ltd. and asked them if they could supply the above information but unfortunately they had no records where they could check the above.

Peik Larsen  
Oslo, Norway

The Remington Double Derringer of .41 rim fire caliber was based on the Elliot patent of Dec. 12, 1865. Manufactured much longer than any other Remington handgun, those made up to 1888 were stamped "E. Remington & Sons," those made up to 1910 were stamped Remington Arms Company. In 1935, production of the over/under derringer was stopped—over 150,000 were made in this time period. Collectors value runs from \$50 in good condition to \$150 in very fine to new condition.—R.M.

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## ESTIMATING DISTANCES

(Continued from page 21)

mentary arithmetic, and you'll know how far away that next buck is. No guess work needed.

The first step is to accurately measure the distances between your eyes—or have your wife do it for you. If you have binoculars you can use those. Adjust the glasses for your eyes, then measure between the centers of the eyepieces; write down this measurement.

For the next step you'll need your rifle and the help of another person. Put your rifle to your shoulder and your head down in a normal sighting-firing position. Now have your helper measure the distance from your eye to the front sight of the rifle; write down this figure. Now divide the largest number by the smallest one. This is your magic number—the one to remember.

For example: In my case, the distance between my eyes is 2.5 inches. The distance from my eye to the front sight of my Model 94 Winchester—when held in a firing position—is 30.5 inches. Dividing the second measurement by the first one gives me a figure of 12.2. For practical purposes I drop the fraction, and my personal magic number is 12.


With this number and my Model 94 I can find the range to any object, providing I know the size of the object. (If I change rifles, of course, I must use a new number.) Here's how it works.

Let's suppose I'm hunting deer. The

average deer in California, where I live, measures five feet from head to tail when standing broadside. When I see a deer, all I have to do is raise my rifle to a firing position, placing the front sight on the left edge of the deer. Now, without moving the rifle, I close my right eye and open the left one. Immediately the rifle appears to jump to the right. (If I shot left handed I would reverse the procedure.) Let's say, for purposes of illustration, that the rifle appears to jump five deer lengths, or 25 feet.

To find the range, I just multiply 25 by my magic number, 12. The result is 300. My target, then, is 300 feet away, or 100 yards. No guessing involved.

A variation of this system was used by the British Army during World War I and also by ships in convoy. The arm was extended with one finger held upright. A standard multiplier of 10 was used, based on the assumption that the distance from eye to extended finger was ten times as great as the distance between the eyes. Actual measurements, however, make for greater accuracy, and it is faster for a hunter to use his rifle instead of an outstretched arm.

Sure, there will be plenty of time when you won't be able to use a system even as fast as this one, but practicing it whenever you are in the field will help you to become a better off-hand judge of distances, and that will mean more meat in the pot. 

## .45-70 TRAPDOOR

(Continued from page 43)

The over-all length of the cadet models was seven inches shorter than its standard counterpart; the barrel was shortened three inches and the stock four inches. The bayonet for the cadet model was 16 1/4" long and was a special issue item—not a shortened rifle bayonet.

There were three carbine models corresponding with the rifle models of 1873, 1879, and 1884. The carbine barrel is 22" long and the stock is 30", dimensions of other parts being the same as the rifle. The carbine Model of 1873 had a swivel attached to the band and did not have a trap in the butt for the cleaning rod as did later models. The 1879 had a "C" on the left side of the sight to indicate that it

was a carbine sight graduated differently from that of the rifle. Carabines manufactured after December, 1890 had a front sight cover held by the sight pin.

One factor for the appearance of a numbered of "mixed" models is that there were so many modifications made between model changes. For example, a straight, corrugated trigger rather than the curved plain one was adopted in March, 1883. Another reason is that so many weapons were repaired in the field or at the arsenal. Further, many part changes were made at a substantially later date than the officially approved date.

The 1883 Short Model was an effort by the Ordnance Department to de-

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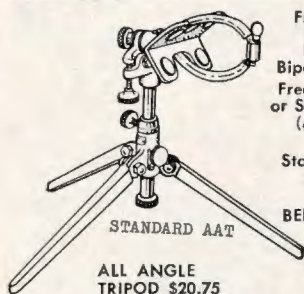
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sign a weapon which would be suitable for both mounted cavalry troops and the foot soldiers. Fifty of these were issued to troops at Fort Leavenworth, Kansas.

The Officer's Model 1875 had a 26"

troops to help supplement the supply of food and were issued one per company. Briefly described they were dated 1881, were 20 gauge, 45 1/2" over-all, and had a 24 1/2" barrel.

Very few match rifles are now in

Year	Rifles	Carbines	Cadet Rifles	Ramrod Bayonet Rifles	Officer's Rifles	Marksman's Rifles	Estimated Serial No. at end of Calendar Year
1873	5	1,942	2				1,942
1874	22,397	10,873	5				35,224
1875	17,393 <sup>1</sup>	7,211	499		10		60,327
1876	11,369 <sup>2</sup>	2 <sup>3</sup>	2,517		115		74,215
1877	16	2,496			100		76,727
1878	20,620	2,000	1,050		65		100,397
1879	18,359		500	1	37		119,257
1880	9,830	14,884	500				144,471
1881	18,862 <sup>4</sup>	501		1,014		2	164,848
1882	27,898 <sup>5</sup>		1,021		50	9	193,767
1883	34,706						228,473
1884	34,775		2,500				265,748
1885	39,814 <sup>6</sup>			444	100		306,006
1886	34,162 <sup>7</sup>	6,000 <sup>8</sup>		559			346,727
1887	34,869 <sup>9</sup>	5,000 <sup>10</sup>	1,000				387,596
1888	34,121 <sup>11</sup>	5,003 <sup>12</sup>	2,000 <sup>13</sup>	3			428,723
1889	36,523	5,000					470,246
1890	22,266		2,500	7,480 <sup>14</sup>			502,492
1891			680	30,461			533,633
1892			2,320	22,121			588,074
1893			5,000	4,760			567,834
Totals	417,985	60,912	22,094	66,843	477	11	

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4—Includes 151 "long range" rifles.

5—Includes 52 rifles "for Infantry and Cavalry".

6—Includes 38,964 "rifles Model 1884".

7—Model 1884.

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11—Includes 100 rifles Model 1884 "with positive cams" and one rifle Model 1884 "not rifled or chambered".

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13—Model 1884.

14—Model 1888.

barrel and a checkered half-stock tipped with silver, an 1873 type rifle sight, a single set trigger, and a wooden ramrod. Two later issues carried pistol grips and a buckhorn sight. The third and last issue had a cleaning rod in the butt rather than the rod underneath the barrel. The Officer's Model did not carry any serial numbers.

The forager shotguns were issued to

existence. These had a heavy octagon barrel 28 1/2" long with target sights. The stock was that of an altered and checkered rifle stock.

The accompanying chart of Model 73 Springfields is reprinted from the latest catalog of Dixie Gun Works, Union City, Tenn., with the permission of Mr. Turner

Kirkland.

## CREEDMOOR CONVERSION

(Continued from page 28)

My Creedmoor does not have a complete Model 1901 receiver assembly, part of it being a Model 1901 plus Model 1868 parts and while I do not consider this to be as basically strong an assembly as a complete Model 1901 receiver, I still believe that it will

handle any reasonable .45-70 hand-load. For this reason I have not attempted to develop any superpotent loads for my Creedmoor, nor do I see any need to do so. The big .45-70 bullets are capable of downing just about any game at close ranges, and



even at velocities of 1200 fps to 1500 fps slam a lot more impact shock into an animal than many of the high velocity modern-day cartridges.

Ed Matunas at Lyman Gun Sight Corp. shipped two .45-70 moulds to me—the #457406 that casts a 485 grain hollow point bullet, and the #462560 with its two large grease grooves and hollow point and a cast weight of 535 grains. I have fired many rounds of Winchester factory ammunition but to me the enjoyment lies in making up my own loads and using the old-time cast, sized and lubricated lead bullets coming close to duplicating the original Creedmoor loadings.

For those readers who are hand-loaders, let me state that I have had two excellent loads that have given me good accuracy. The first used the 485 grain bullet (sized and lubricated in the new Lyman Lubricator and Sizer) ahead of 33.0 grains of Hercules #7 powder and the CCI Magnum primer. Recoil is light. With it I have fired many five shot groups at one hundred yards that would go into two inches.

The other load fired the big 535 grain hollow point bullet ahead of 31.5 grains of #7 powder and the CCI Magnum primer. Give or take a few grains of #7 to custom tailor your load to your rifle and you should have no problems with either accuracy or stopping power.

I know that if I cast a great many bullets and then carefully selected the best, I could then develop a real match load for the Creedmoor that would enable me to come close to duplicating some of the fantastic groups shot almost one hundred years ago by the American team when they fired against the Irish. But, at this time, all I want is a basically consistent and accurate load for both target shooting and hunting, a load that both my son and I can shoot and which has easy-handling characteristics. We plan to put this rifle through its paces on game this fall, taking buffalo on the vast Houck Ranch outside Pierre, South Dakota and then working our way down through Nebraska hunting with Joyce Hornady the bullet maker; then ending up in south west Texas where we will both take a complete bag of game running from javelina through trophy mule deer on the huge Catto-Gage Ranch in Marathon. These big single shot rifles can deliver both stopping power and accuracy in the hunting fields and on the rifle ranges.

During the basic testing of this Creedmoor rifle, I took it to Canada so that I could fire it on the ranges of



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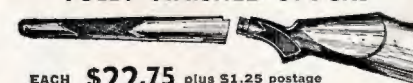


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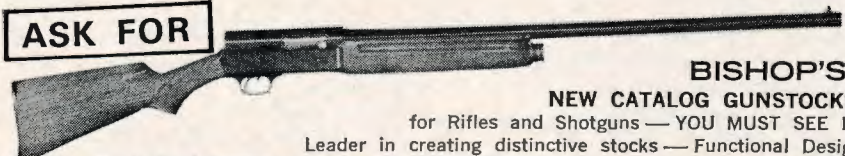


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the Mawcook Shooting Club located outside of Granby in the Province of Quebec. My good friend Roger Leroux is President of the Club and has been good enough to turn over parts of the ranges to me so that I could take pictures and fire the rifle as it was fired one hundred years ago. I dug out pictures of the famous Creedmoor firing positions from Harold Peterson's wonderful book "The Remington Historical Treasury of American Guns" that delves into many little known phases of America's shooting past. While I was in the process of studying these Creedmoor firing positions, Ronald Clermont of Granby—one of the coming Canadian handgun shooters—volunteered to pose for some pictures. From that point on, he was hooked by the big Creedmoor and settling down he fired a couple of groups duplicating the original Creedmoor positions.

As a matter of interest, he preferred the Creedmoor firing position where he lay on his back with his left arm behind his head. He would have continued firing all day long but I did not have enough ammunition and we had to settle for just a couple of groups.

The trigger pull on my Creedmoor rifle has been kept on the heavy side because I do not like a light trigger on a hunting rifle. Under some field conditions such a trigger can become dangerous. As a result, it would be impossible to turn in really tight groups with my trigger that lets off at around seven pounds. Several shooters had difficulty mastering this trigger pull, but once they became accustomed to it they were able to shoot groups that averaged out about two inches at one hundred yards from sandbags and bench rest. The heavy trigger pull turned out to be one of Ronald Clermont's problems due to the fact that his handguns have trigger pulls that have been adjusted to meet the demands of competitive handgun shooting.

In my opinion, this Numrich Arms Creedmoor doubles as a target rifle and as a hunting rifle that can open up entirely new fields of shooting and enjoyment for a great many shooters, particularly for the youngsters and newcomers to the shooting game. I would not be at all surprised to see official matches set up that would limit entries to this type of rifle and class of cartridge. As for the old-time shooter, he will need no introduction to this type of shooting and I predict that sales of these Numrich conversions will exceed all expectations. Frankly, I believe that Numrich Arms deserves a lot of credit for bringing out this conversion. I suggest you try one. Good shooting!



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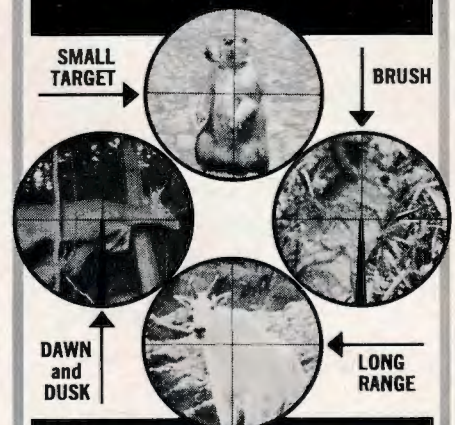


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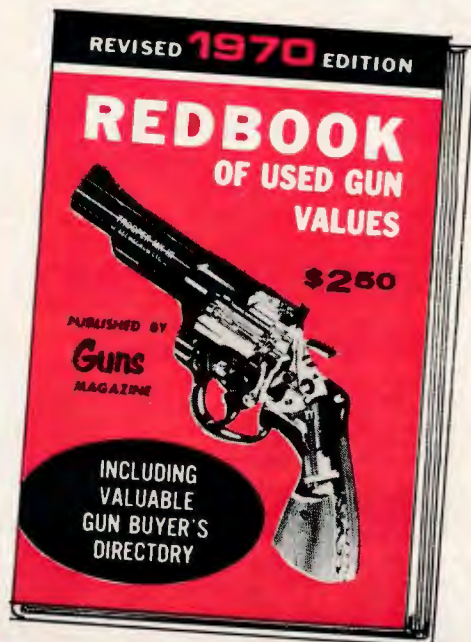
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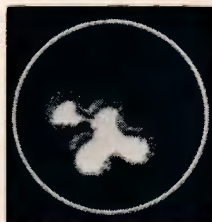


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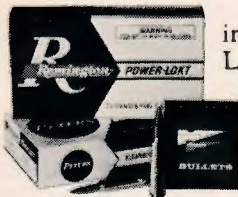


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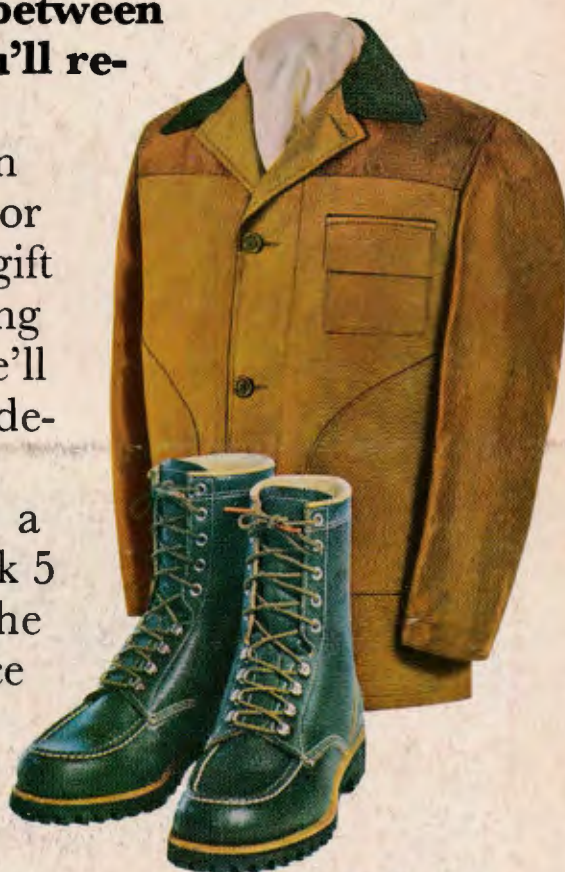
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