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ROSSFIRE

LETTERS TO THE EDITOR

More Pictures of Guns

I have seen about everyone of your magazine covers. I have a complaint. Your magazine is the only magazine that comes out monthly about guns. All the others are a book just to advertise. Since you have the only guns magazine, your company should be different. By that I mean, the cover. Field and Stream has paintings of wild life usually; on Outdoor Life the same thing. You don't want that, though. You want your magazine to be looked up to, fully worth the fifty cents.

In every issue, except a few, you had pictures of men standing there. Well, this magazine isn't about men. It's about guns. On your August 1955 issue, you showed Chester Gould shooting a rifle. Then you had a picture of President Eisenhower. We see Ike's face every day. We want to see pictures of guns. By we, I mean the gun collectors-the people who buy your magazine.

> Kenneth Jepsen Fresno, California

Luger Pistol

I have been reading your magazine for nearly a year. I finally got around to subscribing and I am certainly glad I did. I especially liked the article on the Luger pistol. The article dealt with the pistol in such an interesting and informative way, without bogging down by getting too technical.

Congratulations again on having made a fine magazine like Guns available to people interested in firearms. Cheap at twice the price.

> **Dwayne** Atwell Little Sioux, Louisiana

Hollywood Shooters

I never as a rule break forth into print, especially in a controversial matter, but I want to say you have a great magazine in GUNS. The genius who figured that one out should have a monument for himself. Forget the razzberry that you occasionally will get, as you can't please everybody.

I am in show business, and like to see things authentic. Is there anything you can do to educate Hollywood to the fact that no matter how thin you peel the baloney, you simply cannot have their heroes using 1873 Peacemakers in a picture that is supposed to depict the Florida Everglades in 1836. Also, that Col. Colt's prize babies were what you might call unknown in 1830. And where do you buy these guns that never get emptied???? I have absolute proof that the famous colonel made an eight-shot sixshooter, because I saw it happen in a recent western (so-called). Please place my order for such a curiosity. I am so happy to know that trap door Springfields were used in the War of 1812 . . . No wonder we "beat" those nasty British.

Just glanced through the January 1956 issue, in the letters' column and see a guy named Wray slightly wrathy at you anent the thutty-thutty. In his letter he mentions your mag is full of bull. I think that Wray is full of bull. I used to sling one under my leg out in Nevada years ago, and I never thought it was a pea shooter. Why waste valuable space in your column with his kind of tripe when there must be so much really pleasant stuff to use in its place.

Your format is perfect and leave it alone. Thank God, you are doing a terrific job in debunking myth and legend. The American public has been mis-educated and mis-informed for the past 50 years on its so-called heroes, mostly via the silver screen.

The well-informed and scholarly among us know that Calamity Jane, Belle Starr and others of their ilk were slithery broken-down old tramps with faces like the south end of a hog so why try to make Marilyn Monroes out of them.

Keep up the good work. Keep it quality instead of quantity, facts instead of foolishness, and keep on debunking the holy hell out of myths.

> J. Dorsey Conklin Radford, Va.

Bertillon System

First I wish to compliment you and your staff for publishing a very fine magazine. For many years now a magazine of this caliber has been lacking. Keep up the good work.

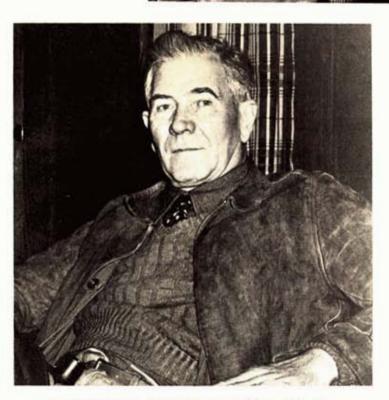
Now for the blast! In the December issue I happened to read a very good piece of ma-terial in the story entitled "Last of the Texas Rangers." However, one small bit of misinformation spoiled the story for me. Mr Preece stated that Frank Hamer "mastered the Bertillon system of fingerprinting." If Mr. Preece will do a little more research he will find that Alphonse Bertillon did not create a fingerprint system or did he help to perfect one. He was opposed to the science of fingerprinting from the beginning. He even went so far as to express his belief that fingerprints were not reliable. Bertillon is credited with the creation of an identification system known as anthropometry. This system involves the measurement of certain bony parts of the human body. This has little bearing on firearms I realize but I thought someone might be interested.

> c/o Carlin A. Pinkstaff U. S. Marine Corps Edenton, North Carolina

MY FAVORITE GUN

By GENE AUTRY

Among my collection of guns is this 32 Winchester centerfire Colt of the old reliable single action type. This is my favorite gun because it is well balanced, has a light barrel and is easy to get a bead on any target because the butt of the gun offsets the weight of the barrel.



By SENATOR A. WILLIS ROBERTSON of Virginia

My favorite gun is a double barrel, single trigger L. C. Smith gun with a 14-inch trigger pull and a 2½ inch drop in the stock at the heel. For quail, I use a 26-inch barrel, bored true cylinder and improved cylinder and for grouse and ducks a 28 inch barrel, bored modified with full choke.



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I thought you might like to get a letter Dear Sierra: from a satisfied customer. I have killed a little of everything in Arizona from jack rabbits to buffalo with Sierra Bullets and have always been well pleased with them, but my son really made a believer of me last week. He was using a 30-06, 150 grain Sierra Bullet ahead of 48 grains of #4895 powder and killed himself a nice buck antelope with one shot at 341 yards. Not bad for a 12 year old boy. This is not just another of those stories, the shot was witnessed by three adults. Enclosed is a photo of one proud kid. R.O. Stutler Proprietor - Stutler's Sporting Goods Tempe, Arizono 17 600 West Whittier Boulevard . Whittier, California

> Have you sent for your FREE copy of Sierra's exciting new brochure, "An Introduction to Reloading"? Send today! Dept. RA651



Located where his home is—on the corner of Confederate and Union Avenues-something was bound to happen when Dick Steinman, of Sandston, Va., started digging in his backvard-and it did. He unearthed a thickly-rusted Civil War rifle. It is believed to be a relic of the Battle of Seven Pines.

0 0 0 After a hard day of work, Herbert Dillon of Salem, N. Y., wanted to enjoy a book and an after-dinner cigar on his porch. But a fly kept buzzing and buzzing around. Dillon got mad. grabbed a .32 caliber revolver from a stand nearby and took a swat at the fly. The gun went off and the bullet struck Mr. Dillon in the left thigh. Dillon went to the hospital. The fly escaped.

0 0 0 Davy Crockett didn't kill a bear when he was three-it didn't happen until he was eight. This is the word passed on by Mrs. Margie Ree Cohn of Okawville, Ill., one of his closest living relatives. Mrs. Cohn said Davy was responsible for obtaining meat for the family when he was eight because his father and older brothers were too busy with the crops. To do this job, Davy was given one bullet a day. If he shot and missed he still was supposed to get the meat somehow. In a short time, he rarely missed.

0 0 0

Wilhem Hansen of Lauenburg, Germany, has found an economical way to hunt. He fired one bullet and two deer fell dead-the one he aimed at and one hidden behind a nearby bush.

0 0 0 A survey is being conducted by the Department of Interior, Fish and Wildlife Service, to find out how much money and leisure time is being spent in the U.S. on hunting and fishing. Ages of hunters, numbers of hunting trips per year, whether large or small game, amounts of money spent on rifles, shotguns and handguns, and accessories like scope sights, binoculars, and decoys, are a few of the items included in the questionnaire. Results will be announced in June.



LADIES COMING first, we are proud to introduce Mrs. Carola Mandel to GUNS readers as our new scattergun editor. Profiled in our last issue, she is one of the top names in the skeet world and is well known to shotgun enthusiasts. One of three new GUNS editors, she will undertake to answer reasonable inquiries from readers. Please enclose a stamped, selfaddressed envelope for reply. Make your questions brief and to the point and Carola will do her best to help you. Ladies' shooting problems are, as they say, "the specialty."

Taking over as our shooting editor is Colonel Charles Askins, with whom our readers are quite familiar for his frequent articles on these pages. A colorful, hard-hitting writer as well as a top marksman who has won national shooting honors, the colonel is also open to queries. An active colonel in the army, he is stationed in Texas where he is continually active in gun sport. Next month he will tell his adventures hunting on the continent in an article on "A Texas Duke Hunts in Spain."

Our new Western editor is Herbert Brayer, a leading authority on the old and modern west and one of the founders in Denver a decade ago of the association of frontier enthusiasts known as The Westerners. Herb is "sheriff" of the Chicago "posse" of this club. His article on western badmen and cowboys, and how poorly some of them could shoot, was published in our January issue. It raised static from San Francisco to London, for Associated Press columnist Hal Boyle picked up the article and put it on the AP wire with his remarks. It went to 1400 newspapers and aroused much comment including editorials in the Philadelphia Inquirer, Chicago Daily News and London Daily Express in England.

In the hopper for next month are several articles you will not want to miss. In the Western department is a comprehensive story on "The Guns Of Annie Oakley" while handgunners will enjoy an article on the Webley, The Colt Of England.

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Guns



MAGAZINE

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APRIL

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COVER

Don Rickey, president of the Oklahoma Antique Arms Collectors' and Shooters' Association, prepares to load a Colt M1860 Army .44 which is one of several common antique percussion revolvers that are used in current black-powder shooting contests.

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Ben Burns EDITOR

Carola Mandel

SCATTERGUN EDITOR

Sydney Barker

Col. Charles Askins SHOOTING EDITOR

Ben Rosen

William B. Edwards TECHNICAL EDITOR

Herbert O. Brayer WESTERN EDITOR

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GRANDPA'S MUZZLE LOADER COMES BACK

THRILL OF SHOOTING BLACK POWDER WITH REMARKABLE ACCURACY BRINGS REVIVAL OF ANCIENT SMOKE-POLES

By WILLIAM C. L. THOMPSON

MUZZLE LOADING SHOOTING with spring around the corner has top priority for many gunners these days. Grandpa's charcoal burner now stands shoulder to shoulder on gun club ranges with the most modern firearms out of New England. Muzzle loaders rate high in fun and training skill and sometimes in grouping ability or accuracy.

The blast of fire and billowing clouds of smoke, which momentarily obscure the sun (and the targets) after a muzzle loader has shot, set these men apart from their fellow shooters. The mystic rites of loading, the shiny



Shooting of carefully loaded cap-and-ball revolvers compares favorably with modern .38 accuracy at targets.

Model Army" pistol is sighted by Don Rickey of Norman, Okla., by aiming through hammer notch at brass foresight.

Colt Civil War "New

trim of the rifles and the powder grime on faces and hands testify that these men are real shooters, not just Sunday plinkers.

Reasons for the current interest in M-L shooting are many. Mostly, it is an outdoor sport. Low power guns at short ranges are used. Farmers are not so worried over leasing their land for a range as they would be if the shooters were high-power rifle marks-



Swabbing bore between shots from M1842 rifle, J. P. Kraig of Compton, Calif., cleans powder fouling, helps accuracy. men. No farmer is happy at having his "south forty" used by a bunch of riflemen firing .300 Magnums capable of striking dead in the next county, but a club shooting "old-time" guns usually finds the farmer a willing audience. Frequently he shows up with a cap-and-ball pistol himself and wants to shoot, too.

Another good reason for its popularity is that M-L shooting is the cheapest sport in terms of cost per shot. The cheap black powder and home-cast lead bullet is loaded directly into the gun. Caps or flints figure out at maybe a quarter or a half a cent per shot. M-L shooting has greater economy than handloading metallic cartridges. If the shooter is critical of his results and loads his gun with equal care, the accuracy can be very good.

There is nothing that equals the thrill and fun of shooting black powder. The blast and smoke satisfy every urge to make noise, and there is the appeal of trying to better the tales of improbable accuracy of old-time heroes. The National Muzzle Loading Rifle Association of Portsmouth, Ohio, establishes uniform rules for competition and also sells powder, moulds and old or new M-L guns when available.

A shooter who finds he can shoot well with a rifle built a century ago has no trouble on the range or in combat when he switches over to modern equipment. During World War II some State Guard training programs were conducted by volunteer shooters who taught riflery to high-school kids with muzzle loading rifles. Where much time is taken in loading, even the novice shooter is not inclined to waste his shots.

Hunting with the old smoke-poles is reviving, except in those areas of the south where it never entirely died away. In Tennessee and Kentucky the muzzle loading rifle has never been entirely replaced by expensive modern rifles, and plenty of game from turkeys to bear are shot every

Jim Fields of Oakland, Calif., shot 50-yard group with old .41 caliber rifle made by Koppikus at Sacramento in 1850's.



Old bench rest rifles with modern micrometer sights are fired by Mr. and Mrs. C. S. DeWalt of Canton, O., in match.

year. Upland hunters out after shotgun game are also finding the muzzle loaders offer some surprising advantages. Muzzle loading hunters make a point of pacing off distances and the maximum range at which deer have been shot is about 150 yards. An antique caplock shotgun may be stocked with a piece of walnut that would cost \$100 in the blank today, and handle as rapidly and smoothly as a quality modern double.

The oldest active shooting club in America today is a group of muzzle loading rifle enthusiasts of Canal Fulton, Ohio, who can trace their club's origin to the Ohio frontier days before the war of 1812. The club holds shoots at 25, 50, 100 and 200 yard ranges. More recently organized clubs are active all over America. The annual M-L matches fornia, Maine and Florida to check the reputed tales of the old backwoodsmen's super accuracy and skill with the identical guns which freed the frontier and built America. Not every shooter can hope to equal shots on record such as the long-range kill of the British General Frazier by New York rifleman Tim Murphy, which helped win the Battle of Saratoga. But good shooting to compare favorably with modern firearms is done at distance which are a surprise to the average target rifleman.

Walter Grote of Canton, Ohio, showed up a modern rifleman with shots from his massive bench rest Warner slug gun grouping tightly into the black at 600 yards, in a contest between his muzzle loader and a modern long range cartridge rifle. The competition shooters at the

are held at Friendship, Indiana, on the Walter Cline Memorial Range owned by the National Muzzle Loading Rifle Association. Secretary of the NMLRA and grand old man of cap gun shooting is E. M. "Red" Farris, who coordinates formal muzzle loading gun competition through the official paper ''Muzzle Blasts."

At Friendship each Labor Day weekend hundreds of shooters gather from as far off as Cali-

Standard M	uzzle Loadi	ing Charges
Type and Caliber	Bullet Weight	Powder Charge
Musket .64 ball Hall's Carbine .64 ball US Rifle .58 conical US Pistol .58 1855	389 grains 389 grs. 500 grs. 450 grs.	130 grs. Musket Fg 85 grs. Fg 60 grs. Fg 40 grs. Fg
English Enfield rifle .577 Hall's & Common	530 grs.	70 grs. Fg
rifle .52 ball US Pistol .52	220 grs.	100 grs. Rifle FFg
1836-42 .52 ball Colt .44 Dragoon	220 grs. 220 gr. conical, 146 gr. ball	50 grs. FFg 40 grs. FFg & FFFg
Colt .44 Army 1860 Navy .36 1851 & 61	200 gr. conical	28 grs. FFg & FFFg 20-18 grs. FFg & FFFg
Pocket .31 1849		13-14 grs. FFg & FFFg

Camp Perry N at i o n a l Matches, where this exhibition was staged between formal shooting events, were astonished at the long range capabilities of the 70-year old rifle. They would have been less astonished had they looked in on a typical muzzle loader shoot anywhere in the country.

The Fort Dearborn Frontiersman, a muzzle loader club of Chicago. operates a range for black powder front loaders about 25 miles from Chi-



For best accuracy separate charging cup is filled from flask with powder.



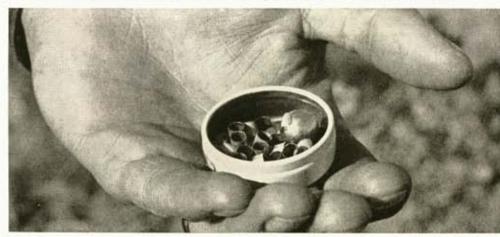
Compound loading lever is used to press each bullet down into chamber.



Measured charge is poured into each chamber with hammer on half-cock.



Round bullets for mid-range accuracy are put one at a time on chambers.



Small copper cups filled with mercury fulminate when struck by the hammer ignite the charges in chambers through individual tubes called "nipples."

Colt frame has capping cut-out so percussion caps may easily be placed onto chamber cones or nipples. Cyclinder spins free for loading at half-cock.

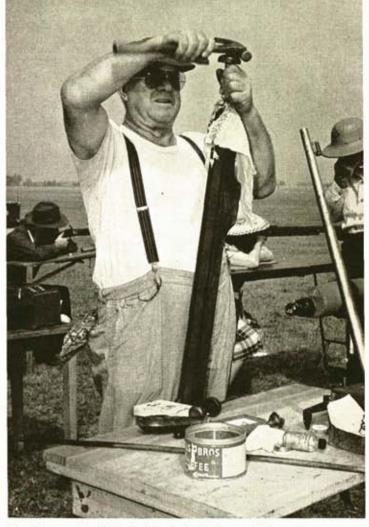


cago's Loop. It is placed in a little valley that breaks the slope of a hillside near the Argonne Atomic Laboratory. Stout wooden benches for shooting and for loading equipment have been constructed by the club members, with backstops of scrap railroad ties. One or two Sundays a month in good weather the club holds a shoot. Various forms of shooting are tried, from rest, standing or offhand, to the "lucky" match. In this shoot the bullseye targets are tacked up, white side to the shooters. Then, even if you have had an off day and old Betsy doesn't shoot right, you have as good a chance as any of the others in putting a shot close to the center of the black, which you can't see.

Firearms for the M-L gunner fall into four main groups. At the top is the really perfect specimen of a relatively valuable old gun, in as good condition as it left the factory. Consistent use of these fine relics should be avoided. They will rapidly show wear and use. For the collector, there are just too few of them to go around.

Next is a group which will soon see some newcomers. It is the newly-made replica, built according to the old-time pattern and made up just for shooting the muzzle loading way. Single shot pistols and rifles of the "Kentucky" style have been produced for several years by custom riflesmiths. Parts for old Colt and Remington revolvers, including barrels and cylinders, have been made on a limited production basis for repair and restoration. Bill Ruger is considering the production of the Remington cap-and-ball New Model .44 of the 1860's. Colt's has briefly toyed with the notion of reissuing the famous New Model Army 1860, with the streamlined barrel and creeping lever rammer. An accurately-made reissue of this weapon, which was the principal revolver of the Civil War on both sides, would be a welcome addition to their stock of modern guns.

Third is the best gun for the (Continued on pp. 38)

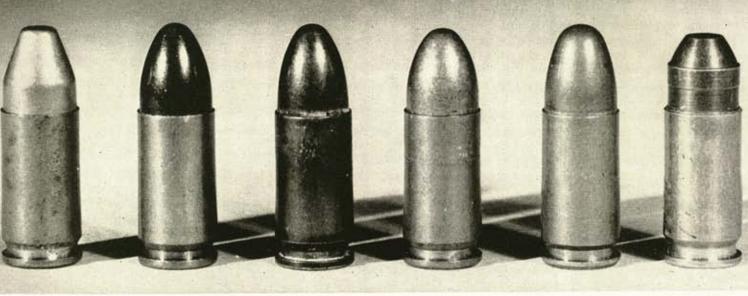


Bench rest rifle is loaded by Ralph Dunn of Fort Wayne, Ind., by hammering cloth-patched bullet into bore.

Heavy rifle used by Ralph Dunn has built-in rest at front of stock. Sunshade over sight prevents distracting reflections.



MOST CONTROVERSIAL CARTRIDGE



Bullet shapes of 9mm progress from first Luger load (left) through tommy gun rounds to Army test .35 cal. (right).

ARMY ORDER HALTING 9MM PISTOL PROJECT STIRS UP ARGUMENT ANEW ON MERITS OF LUGER CARTRIDGE USED BY MOST NATIONS EXCEPT U.S.

BY KENT BELLAH



Headstamps identify date and make of 9mm loads. First three are German, others Italian, Canadian and U. S. test.

T HAT UNEARTHLY DIN you hear, sounding like a thousand radios turned to full volume, is the yakety-yak from shooters arguing over the most controversial pistol cartridge since the invention of gunpowder—the 9mm Parabellum caliber. Our Army wanted it once, and equally true, they didn't want it. They tested it, rejected it, then ran the tests all over again.

While we played with it in good clean fun for half a century, most other nations snatched it for their military use. At least 80 different weapons and 24 different types of ammunition were made in this world's most popular caliber. In the 9mm caliber can be found low-pressure loadings hardly stronger than a belch, on up to high speeds and energies which crowd the laurels of the .357 Magnum, hottest of the hotshots.

Meanwhile, we toddle along with a pistol in an essentially outmoded caliber, the .45. There is no question that the .45 Colt Automatic is a fine pistol, but many ballistic and design factors enter into the requirements for a modern handgun. Our affection for the old .45 has retarded American pistol development for half a century.

The 9 mm would have replaced our .45 ACP long

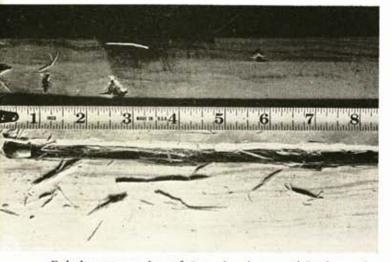


ago for both pistols and sub-machine guns, except for one little detail. You don't have to be a mental giant to figure out why. It's money, the green stuff people work for and sometimes lie for and die for. The military never had enough equipment in wartime or enough money in peacetime. It's expensive to change weapons, but unfortunately we have to prepare for war during peace, and the fate of a nation depends on decisions made between wars. And so it seems rather disturbing that in a popular vote by NATO powers, the 9mm would win by about 14 to 1. Such popularity must be deserved. The 9 mm is more efficient, with longer accurate range, lighter weight and greater penetration. Less noise and recoil gives better shootability, and it's tops for machine weapons. Ammunition is available around the world. The pistol is lighter weight and easier to carry by the always overburdened soldier. The average service man finds it far easier to shoot than our big .45 ACP.

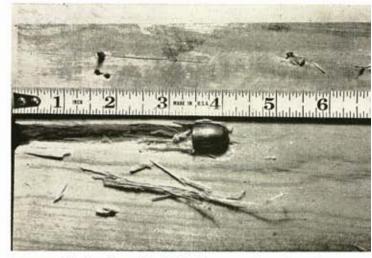
On the other hand our service gun is a subject that's hotter than a pistol, with no pun intended. It's been cussed and discussed, sworn by and sworn at. Some Army men call it an old friend, while instructors and rookies



Light Commander Colt 9mm uses less weight in ammo than .45 and is much easier for soldier to shoot.



Relative penetration of 9mm in pine wood is shown by 81/2'' channel bored into target block by German bullet.



In same block of wood, .45 bullet proved to have less penetration, reflecting lower muzzle velocity of cartridge.



Heavy 1/8" steel plate fired at in tests reveals comparative power of U.S. .45 cartridge and German service bullet.

call it an old fiend. The .45 actually has more stopping power than smaller calibers, which is the main argument put up by supporters. But that doesn't mean it has much, if any more killing power. If the argument of stopping power would hold water as well as a shotgunned Stetson hat, why not replace the .30/06 rifle with the .600 Nitro Express? As a matter of fact, we are going to have an even lighter rifle and cartridge, and for very good reasons, that also should apply to the pistol.

Much has been written about comparative tests between the .45 and the 9mm Luger load. Any user of the Luger knows that the gun is subject to malfunctions of one kind or another which can be traced directly to the weak American ammo of low power as loaded by Winchester and Remington commercially. Although glorified by "Super-X" or other high speed trade names, the U.S. cartridges are inferior to the European loads.

To settle in my own mind the differences between the .45 and 9mm, I ran some penetration tests for GUNS. We don't have much ice down here in Texas, but wood and steel were used. Five 1" x 6" boards 25 inches long were nailed together to make test blocks. Bullets were fired into the center board from 12 inches away.

A Luger and a Smith & Wesson 1917 .45 were used for this test. The block was reversed so that it could be used



German service 9mm bullet shed its jacket (left) in penetrating $\frac{1}{8}''$ steel plate but .45 slug burst jacket, flattened out and stopped cold (right) on steel. to test both calibers in the same wood. The bullet channels were cut open when the blocks were disassembled.

Ammo I used included the hot German 9mm load, a 124 grain bullet at about 1300 feet per second in a 12" barrel. The exact figure in my shorter Luger barrel I don't know. The G.F.L. 38 cartridges, used in Italian submachine guns and loaded by Fiocchi, also used in my tests, developed 1250 f.p.s. in a 6" barrel, according to the Fiocchi factory records. It gained this velocity with a 115 grain bullet developing slightly more than 25,000 pounds per square inch pressure.

The heavy German bullet penetrated 81/2'' of pine. Contrasting, the .45 fired in the 51/2'' S & W revolver barrel which maintains velocity equal to or greater than the auto pistol's short barrel, penetrated only 41/2'' in the same board. No expansion of the jacketed bullets was noticed in either caliber.

On $\frac{1}{8}''$ steel plates, the difference in penetration was significant. The 9mm went through (from 12 feet distant); the .45 didn't. Even on a curved plate at an angle, the .45 ricocheted doing little damage, while the old Western truncated cone bullet made a huge dent.

I cross checked my results with Val Forgett, formerly of Aberdeen Proving Ground and now a hot-tempered southerner in South Carolina. He had also got steamed up over some published tests and ran his own. Military 9mm specifications call for penetration of a helmet at 25 yards at 30° from normal.

"For the helmet test," he writes, "I took German, Canadian, British, Finnish, Swedish and Czech ammunition, loaded them in my P-38, and proceeded to shoot through both sides of my one and only U.S. helmet with all the above mentioned loads.

"Those 9mm's all sure raised hell with that helmet. I was so pleased with the first test that I cut some $\frac{1}{8}$ " hot rolled steel plates for penetration and ran my own series. Using comparative ammunition I fired at these $\frac{1}{8}$ " plates from short range under equal conditions."

Tabulated, his results were:

Plate #1 Czech 9mm ammo, clean penetration. This ammo was sold commercially for a time recently in the U.S. and is still available in some stores.

Plate #2 & #7 9mm Czech, shot at $\frac{3}{16}''$ thick plate, deep penetration.

Plate #3 9mm U.S. Western Super-X, made only a fair-sized dent.

Plate #4 9mm German service loading, clean penetration.

Plate #5 9mm Canadian service load, good-sized dent.

Plate #6 9mm Swedish service ammo, about like No. 5.

Plate #8 9mm U.S. on $\frac{3}{16}''$ plate, very slight dent.

Plate #9 U.S. .45 service (E C S 43) on 1/8" plate-slight dent.

"Now that we have heard the pros and cons of penetration, what sense does it all make?" says Forgett.

"What you want in a service pistol is comfort in shooting, fairly accurate moderate range and a design simple to maintain. The Germans were going in for a lighter pistol cartridge at the end of the war. Called the 9mm Ultra it was half-way between the 9mm Luger and the .380 Colt cartridge, and was used in a Walther of the basic .380 PP size with locked breech. The turning barrel was exposed at the front and locked somewhat like the Savage auto pistol barrel held the slide under pressure. The recoil spring was in the handle and worked on a lever which pushed the slide forward. Otherwise it closely resembled the regular Walthers. Burt Munhall of the H. P. White Ballistic Laboratory gave me several rounds of the 9mm Ultra and I found it very pleasant (Continued on page 41)



Battle-tested Browning Hi-Power is used by Canadians, British, and Chinese and is said to be basis for Russian 1948 model.



AS A YOUTH AND IN EARLY POLITICAL CAREER, ROOSEVELT WAS AN ACTIVE HUNTER-SPORTSMAN BUT THEN POLIO ATTACK STOPPED SHOOTING INTEREST AND HE TURNED TO COLLECTING GUNS

By HARVEY BRANDT

Remarkable candid photo of Roosevelt in shooting coat was taken on Washington, D.C., range in 1917 when FDR tested special model Springfield '03 with Lyman-type sight. Regular Springfield has rear sight on barrel about where FDR's left hand is, but special weapon which FDR is shooting has fulllength guard and early Lyman adjustable receiver sight.



AS A SHOOTER

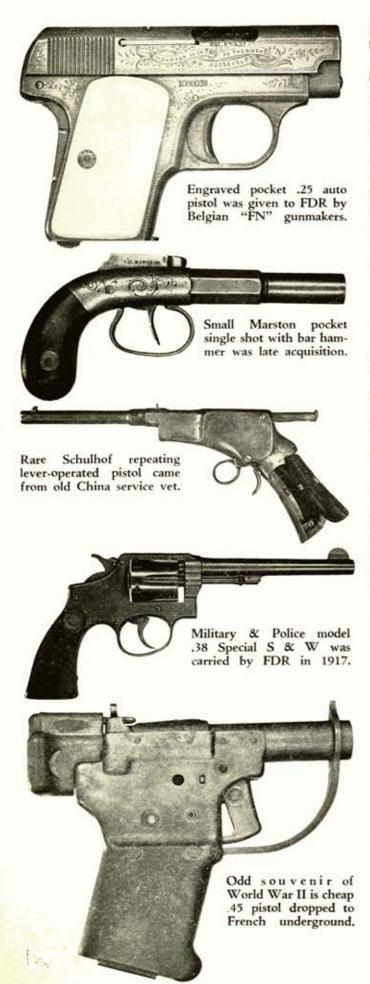
A LONG Pennsylvania Avenue, which glistened wetly in the grey light of April 12, 1945, rolled the cortege of somber black cars, statesmen and citizens alike quiet and thoughtful. Hundreds of thousands of people lined the broad avenue. Once they had stood there, cheering. Now the rain mingled with the tears of a nation as the chief came by for the last time. No open sedan for him, so the smile of victory and the jubilant cigarette holder, symbol of a thousand cartoons, was visible. Instead, a gun carriage: the big horses slowly walking, drawing the caisson with its burden of black. Franklin Delano Roosevelt took his last ride on a gun.

This man who had gained the admiration of the people of the world, some of whom were in fact his bitterest enemies, might have gone down in history as a sportsman and hunter more famous than his "Uncle Teddy," Theodore Roosevelt. In their lives historians have found many parallels, not the least of which was the presidential nomination which came to both as fairly young men. In hunting and shooting, too, they shared a common interest, up to a point. That point was a warm day in August of 1921 when Franklin Roosevelt helped put out a forest fire, spotted from his boat while on a coastal cruise. The smoke drew his attention and the boat put in to shore. With his friends he worked to combat the flames. What was supposed to have been a relaxing cruise from the worries of politics was turned into a fire-fighting escapade. Later came a refreshing plunge into the water—a swim to cool off. Then polio.

It seemed almost absurd to the big man to find himself flat on his back with a children's disease. But the results in loss of use of his legs, and in a life afterwards harrassed by continual pain, were far from absurd. Only a rugged constitution built up through an early life of athletic activ-

Franklin D. Roosevelt with Purdey double guns (second from left) was enthusiastic gunner. According to his wife, Roosevelt "very often went hunting; ducks were his favorite." FDR shot at Pilanterry Island, near Beaufort, N. C.





ity could have withstood the shock. Important in his pattern of early recreation were guns and shooting.

In the Roosevelt Library at Hyde Park today is a small gun collection. It is made up mostly of gifts. By contrast with his huge and important stamp collection is this small but highly interesting group of firearms. The stamps reflect the sedentary life forced upon him by polio. The guns, a less significant collection, recall active days long gone by.

As a boy, wandering the fields and woods over his wealthy father's Hudson River valley farm, Franklin was an enthusiastic naturalist. His companion was a red setter appropriately named "Marksman." Bird collecting was his major hobby in the 1880s and 90s. He owned a small shotgun then. Biographer Alden Hatch gives an interesting dialogue which probably strikes close to the facts:

"Franklin's next collection was birds. When he was eleven he went to his father saying, 'Papa, I want a gun.'

"'What kind of a gun, Franklin?'

" 'A real shotgun!'

"'You're pretty young,' James objected. 'Besides I didn't think you were particularly fond of killing things.'

"'It won't be for fun,' Franklin promised. 'I want to make a collection of birds that live around here. I'll only shoot one of each.'

"Of course, it was fun; skill of any sort is a joy to exercise; and Franklin quickly became a very good shot. But he stuck to his word. Only one bird of each variety did he shoot, but his pertinacity enabled him to get over 300 specimens. Franklin's is still one of the best collections of the birds of Dutchess County."

Roosevelt's hunting was followed up by taxidermy. He prepared and mounted many of the birds in the collection.

The kind of shotgun FDR used is not on record. It propably was a small-bore 9mm or 12mm Flobert smoothbore. Later some American arms companies made smallcaliber bird-collecting shotguns but there were few on the market in 1893. Because shooting was so common to Roosevelt, and could be enjoyed literally by stepping out of the door of his Hyde Park home and striking across the fields, it found little mention in his early correspondence. As a footnote, after asking about the health and prospects of the new butler, young Franklin wrote from Harvard on Oct. 16, 1901, "Dear Mama. . . . Please get my guns from Po'keepsie."

A politically active life beginning early kept Roosevelt from becoming the landed Dutch patroon which some people urged him to be. But he enjoyed hunting and went on frequent hunting trips. Some of his hunting was "armchair stuff." One of the books which he prized in his college days was Ernest Thompson Seton's "Wild Animals I Have Known."

Ducks came in for their share of the future President's attention. In company with a dozen Washington associates including his boss, Secretary of the Navy Josephus Daniels, Roosevelt went hunting on Pilanterry Island, north of Beaufort, N. Carolina in 1915. One day five guns, Roosevelt's among them, accounted for over 60 birds including a couple of geese. The individual tally is not recorded, but off to the side of the photo is a game-keeper from the hunting lodge who seems to wear a self-satisfied smile.

As Assistant Secretary of the Navy, a post Roosevelt held from 1913 till 1919, he worked with heavier stuff than shotguns. "We must deal *now* with the matter of munitions and preparations on a large and complicated scale," he Valuable Moorish silver-mounted snaphaunce muskets more than 125 years old were presented to FDR during World War II by Pasha Hadj Thami El Glaoui of Merrakech in French Morocco.

wrote in 1915. When the war came to America in 1917, so efficient had Roosevelt's preparations been that he had cornered the market on many essential materials. The laggard Army top brass had to come to him for supplies!

Forseeing the entry of the U.S. into the conflict, Roosevelt had set up training camps and instituted civilian training cruises. About 80 percent of the men so trained graduated with commissions in the Navy, and Roosevelt was recognized by his enemies for his talents in organizing American military power. Commenting on this period in a memo of 1944, a reminiscing Roosevelt wrote:

"In the spring of 1917, just before or after we declared war, the Secret Service found in the safe of the German Consul in New York, a document headed: "To be eliminated". The first name on the list was that of Frank Polk; mine was the second, followed by about eight or ten others.

"As a result, the Secret Service asked us both to carry revolvers as we both habitually walked to and from our offices. I was given the revolver and the shoulder holster. I wore them under my arm for three or four days. Although a fair shot with a revolver, I realized that it would take me about 30 seconds before I could reach inside my overcoat and coat, haul out, cock, aim and fire. By that time I would normally be dead with the assassin half a mile away!

"I put the revolver in the top table drawer where it remained for 25 years."

The Smith & Wesson .38 Special M & P revolver which was Roosevelt's companion in this brief pistol-packing interlude is on display now at the Hyde Park Library.

Supervising the activities of the Navy brought Roosevelt into Marine affairs. The noted skill of Marine marksman turned his thoughts to rifles. He (Continued on page 54)



Pheasant abounded on Pilanterry Island where Roosevelt (seated 2nd from left) went shooting before polio attack.

Assistant Navy Secretary Roosevelt (left, rear) tested his specially-sighted Springfield which was evidently built to order with long sight radius like then-new Enfield rifle. Marine officer instructs fellow politician on regular M1903.



HOW TO KILL SQUIRRELS WITHOUT HITTING 'EM

GENDARY SQUIRREL BARKING GETS VARMINTS WITH MEAT UNDAMAGED BY SHOCKING USIVE GRAYTAILS TO DEATH WITH HAIR-WIDTH SHOOTING ACCURACY ON TREE BARK

By CARLOS VINSON

R AT NEWBY fairly hooted at me when I told him I would bring him a mess of gray squirrels without any shot or bullet holes in their hides. "You gonna' hypnotize them," he dug, "or maybe sprinkle salt on the tails of some half tame park squirrels. Or maybe you have learned to lasso the creatures."

"Heck no," I countered, "I'm going to kill you some real wild gray squirrels with a rifle without drawing any blood or even slightly scarring their skins."

"Now I know you are loco," he said, with a queer but sympathetic sort of grin on his face.

And I can't say that I blamed Rat for feeling as he did about the whole thing. I doubted it, too, when I first heard about how it could be done with a .22 rifle. An old backwoods squirrel hunting friend of mine, "Big Lee" Harris, invited me along on a squirrel hunt with him one day, and he convinced me. "Ain't no use messin' up good squirrel meat," he said, "when they can be killed without scorchin' a hair on their hides." And he proceeded, very calmly, to show me how it was done.

That was what got me started off with Rat on killing squirrels without hitting 'em.

As much as friend Rat likes to squirrel hunt and eat squirrel and dumplings, at the time his business had him tied down so that he just couldn't get away for a hunt. I am not in the habit of killing game for the other fellow, but this case was an exception. At least, I could supply him with the main ingredient for a pot of squirrel and dumplings.

Besides this was one hunt that I'd rather go on alone. If I messed up the deal, I didn't want any eyewitnesses along to rib me about it. Hunters are noted for whomping up good excuses, and I knew I could think up a good one

Light automatic .22s such as Winchester 77 prove as effective for squirrel barking as old Kentucky rifles did in frontier days when hunter's trick originated.



Remington automatic (top) with J2.5 Weaver or M77 .22 with B6 Weaver in tip-off mount (below) are ideal "barking" rifles. Solid bullets, not speedy hollowpoints, are used.

for Rat if I failed to deliver the goods. I had watched "Big Lee" do it, and believed I could duplicate his performance, but I wanted no eyewitnesses along if I failed.

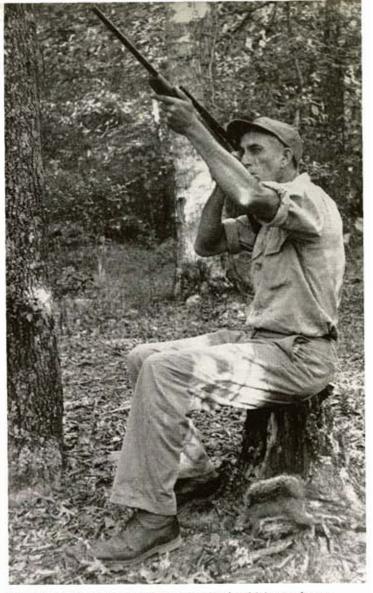
I was skirting my favorite Tennessee hill country squirrel woods the following morning before sunup. Everything was there that makes gray squirrels happy and contented. Old established den trees, a small brook trickling through the woods, plenty of red oak acorns, hickory nuts, dogwood and black gum berries, and a field of corn bordering the woods on one side. I knew it would soon be time for fuzzytails to start leaving their dens.

A recent windstorm had uprooted a gnarly old maple tree near the edge of the woods, so I sat myself down on the fallen maple to wait for some graytails to show themselves. I squinted through the 4 power scope mounted on my .22 auto-loader and saw right away that there wasn't yet enough light for real pin-point shooting accuracy. And I knew that it was going to take almost hair-width accuracy to kill the little nut crunchers without putting any holes in their skins.

The squirrels themselves settled this little matter for me. In a few more minutes I could see and hear several of them leaving the den trees, and most of them frolicked around in the tree tops for 30 minutes or so near their dens before starting down to eat breakfast. Finally some of them started working their way toward the edge of the cornfield near where I was sitting on the blown-down maple. I sat like a statue through it all despite the fact that a couple of kingsize mosquitoes insisted on getting their breakfast from the back of my neck. Sitting perfectly still is one of the main secrets of successful squirrel hunting.

Finally I saw one scampering out a limb about half way up a tall red oak in plain sight about 35 yards from me, and I moved my rifle just enough for the graytail to catch the movement and freeze on the limb for a closer look-see. He flattended himself out beautifully on the limb, and that was just what I wanted him to do.

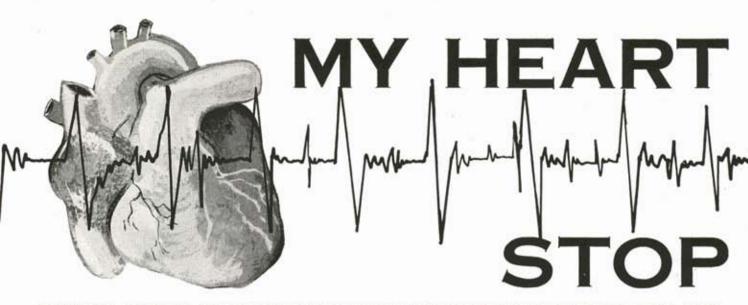
Very slowly I raised my rifle into shooting position, centered the scope's cross-hairs on the very top edge of the limb directly under the squirrel's heart, and very gently squeezed the trigger. The sharp report of my .22 was followed by a bullet thud entirely different from the way a bullet sounds when it plops into (Continued on page 58)



Careful aiming at point below squirrel which nestles on tree limb is essential to make barking shot which counts.



Squirrel is killed by shock without breaking the skin, leaving animal undamaged, ready for skinning and stewpot.



DOWNED BY HIGH BLOOD PRESSURE, TULSA PILOT FINDS THAT BENCH REST AND SKEET ARE BOTH GOOD MEDICINE FOR MEN WHO HAVE TO SLOW DOWN TO LIVE

By CHARLES L. NEUMANN

Charles Neumann has learned to keep his high blood pressure down even at critical moment when he takes fine sight, hoping to hold last shot well in the group on bench rest target. Actually, bench rest shooting can be relaxing, placing emphasis on nerves and control rather than physically taxing. TROUBLE DIDN'T

I HAD heart trouble long before America suddenly became acutely aware of coronaries because President Eisenhower was hit by a sudden heart attack. And I learned that a man can live with heart trouble, can even continue a sport like target shooting despite his handicap. As a matter of fact, bench rest shooting and skeet are good medicine for people like me who have had to slow down to live.

Today despite my heart trouble I am active in shooting competition but my days of lugging a Mauser sporter over the Denver hills after deer are gone for me. I used to be an airline pilot but now I have to sit on the job, being in radio maintenance of aircraft radio. But essentially I've managed to live a life that most people would consider normal enough—and part of that normalcy is shooting.

My high blood pressure caused one friend jokingly to call me a walking explosion waiting to happen, but after four years of waiting for the explosion, I still feel fine. The only exploding I do these days is a couple hundred rounds weekends on the club range. Thanks to a new control medicine, Ansolysen, and my own personal prescription which is letting off steam shooting at targets, I'm doing quite well, thank you.

In this blood-pressure or heart trouble business, I believe bench rest shooting has given me just the tonic I need. Once I was dubious but I learned it takes skill and patience to build up a 'tack-hammer' rifle and develop a winning combination of cartridges and bullets. The competition in this kind of shooting is stiff enough to provide all the excitement anyone would want. And it is a sport that doesn't take a lot of strenuous work to enjoy. That's why it's perfect for people like me who can't race around like college kids any more.

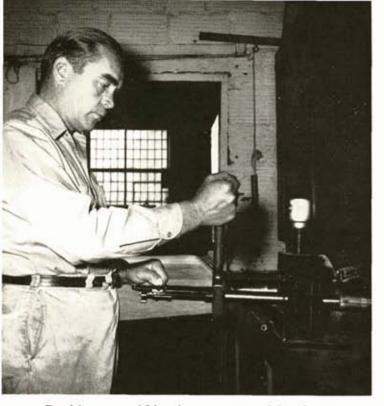
President Eisenhower's heart attack has put the spotlight on heart conditions and a lot of the frightening mystery of these ailments has been removed by publicizing the President's case. It has proved that someone with a heart condition does not have to wind up being a wheelchair case but can go in for limited physical exercise.

Like myself and about 25 million other Americans, the President is a confirmed gun addict and a good shot, too. His doctor, Dr. Paul Dudley White, has recommended about the same treatment for him as mine did for me—a low fat diet to keep the weight down, rest and limited activity.

There are, however, some people who just give up and wait around to die when they find out they have heart disease. Not me or Ike. The fact is that 80 percent of the people who have had heart attacks like Eisenhower's recover and can lead normal lives if they take it easy. The doctors don't tell you not to exercise. They encourage it, but they do say not to over-do it. Bench rest shooting and skeet gives guys like myself plenty of outdoor activity and competition with just as much spirit as any other sport. It







Precision gunsmithing is one aspect of bench rest work Neumann enjoys. He fits barrels to make his own rifles.

Trying to get the feel of the "old days," Neumann whom doctors grounded sits in cockpit of hangered De Haviland.



may seem static, but bench rest shooting is a lot of fun. When you are sort of forced into it, though, it takes a little getting used to, especially if you lead a pretty active life before.

That was my story before heart trouble hit me. I've always liked guns and when I was flying for TWA airlines before the war, I'd visit all the gun shops and antique dealers in every town we stayed in. I collected quite a few really good guns—mostly revolvers and pistols. I was an active hunter, too. As kids, my brother and I used to hunt on our uncle's farm up in Connecticut near New Britain.

During the war I flew as a test pilot for Douglas Aircraft out of Tulsa and didn't get to do too much hunting for guns. But I did learn to load my own shotgun shells and did quite a bit of hunting for small game. Almost every weekend we would go hunting, and during deer season I'd go down into the Kiamichi mountains in southeastern Oklahoma. After the war I started flying for Warren Petroleum Corporation in Tulsa as a company pilot and tried to renew my gun-collecting hobby.

But the antique gun business was hit by inflation like everything else. Too many guys started collecting. I quit serious collecting and picked up a .30-06 Springfield to make into a sporter for deer hunting.

In the off season, I would go out to Tulsa North Airport where they had a bench rest for practice shooting. Jacketed bullets were hard to get so we used cast lead ones which were not very accurate, but we had lots of fun. I did a lot of shooting with Charlie Jennings, a past president of the National Bench Rest Shooters' Association, and I got to like the one-hole target game. It proved to be a terrific investment when I was hit by heart trouble in 1951.

There wasn't any organized competition around Tulsa for varmint rifle shooting and when a bunch of the fellows organized the bench rest club about 1949, I joined up. I made a .270 varminter out of a Mauser I got from a fellow just back from Germany, and used it as a bench rest gun for quite a while. But the boys with the .22's were winning the prizes. I was still flying then and didn't have enough time to really go into the shooting competition like I wanted to.

About that same year the Civil Aeronautics Administration doctors began noticing that my blood pressure was rising. By 1951 it had gotten high enough to the point that they were worried. I started to have severe headaches. I could have continued flying with a waiver since I had about 20 years experience, but the company suggested a ground job for the sake of my health.

I suppose anyone who hears news like that feels a little sick at the stomach; I know I did. I'd been flying for so long, I just felt I couldn't quit.

But I had been forced to slow down once before and I was able to get used to the idea.

My first brush with being grounded came several years before the war when I was in a pretty rough plane crash. They gathered me up and took me to the hospital but apparently the docs thought there wasn't much use in trying to put me back together. After a day or so of waiting, I finally started beefing. I told them if they were waiting for me to die, they were wasting their time and that they'd better start putting me back in one piece. My back was broken, as well as my nose and most of my ribs and several other bones. They did a good job of it and I was able to get up in a few months. One leg and a shoulder were a little out of line but I was able to pass the physical exams for the airlines and Douglas with- (Continued on page 44)

AMERICA'S FIRST WILDCATTER

UNSUNG BUT NOT FORGOTTEN LAWYER CHARLES NEWTON DEVELOPED RIFLES AND AMMO FOR THEM WHICH ARE STILL AHEAD OF TIMES

By HARRY O. DEAN

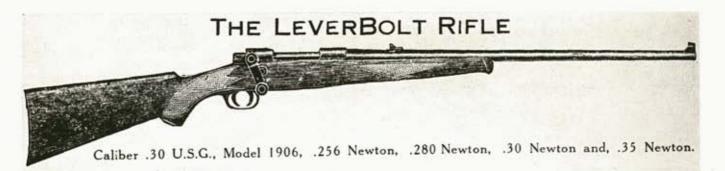
Newton rifle with safety on bolt sleeve and hinged floorplate had many ideas later copied by other U.S. gunmakers.



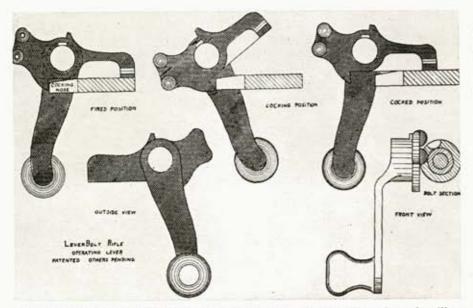
More catalogs than rifles were made by Newton, but ballistic principles of his ammunition designs became basis for highpower cartridge development in later years.

You STILL SEE THEM on the gun racks in the stores. The price tags are marked "\$75, or make offer." Nobody quite knows what price to ask for them . . . nobody knows much about them. Yet every other shooter has seen one, or owned one, or used to have one, or has always wanted one . . . they're Newton rifles, product of Charles Newton, America's first "wildcatter" and probably the mostmisunderstood gunmaker in modern times.

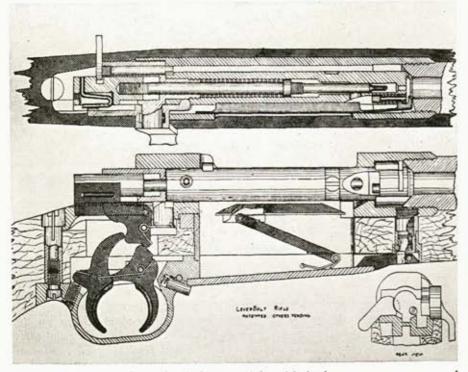
Newton appeared on the firearms scene around the turn of the century, when our single shot military rifle proved inefficient against the 7 m/m Mauser repeaters of the Spanish American War. The bolt action rifle had come into its own and the U. S. Army adopted the Krag bolt action, quickly following it up with the Springfield action of 1903. It was in 1906 that the .30-06 appeared in its present form. It was at this time that a genial round-faced lawyer in Buffalo, N. Y., eyed the new cartridge with a sly smile and a gleam in his eye. He was Charles Newton, whose name is familiar to countless thousands of shooters. Yet few really know much about him or his rifle. Newton was one of the pioneers in the development of the modern high velocity cartridge. He was one of the early "wildcat" cartridge designers, developing improved cartridges on the .30-06 case. Most of his work was done during the early nineteen hundreds, when he had available modern Mauser and Springfield bolt actions as we now know them. They were well adapted to the types of cartridges that he had been contemplating.



Rarest of Newton rifles is the lever-bolt action he proposed to make at Marlin but instead he went bankrupt again.



Principle of operation of Newton's bolt handle allowed one operation of pulling bolt to rear to do unlocking, cock sear and extract fired case like normal rifle.



Attaching lever handle to fixed pivot on right of bolt sleeve suggests any good gunsmith could convert a regular rifle to Newton's speedy lever-bolt design.

Newton had already toyed with necked-down versions of many of the older rimmed cases and from this work evolved the .22 High Power Savage. He then worked with the rimless cases starting with the 7 m/m Spanish Mauser cartridge necked to .22, creating the .22 Newton High Power. His pet caliber was .25 and it was with this caliber in mind that he eved the new 30-06 cartridge. Knowing that many of the current model .25 caliber rifles could easily be rechambered for such cartridge, he sought to eliminate a potentially dangerous condition by adopting the .256 (foreign 6.5 m/m) bore diameter. Another reason was to avoid competition because other experimenters were also developing the .25-06 cartridge. Newton's version in ,256 caliber was to become known for its accuracy and flat trajectory over extended ranges.

According to claims made in early Newton catalogs, the .256 was tried in the Winchester Model 95 lever action rifle which was then made for the .30-06. It was probably a rebarreled .30-06 that he used, since the head diameter was correct on the breechblock. He stated that the M95's shot well but that he preferred the more positive breeching of the newer bolt action together with the certainty of the camming motion on extraction.

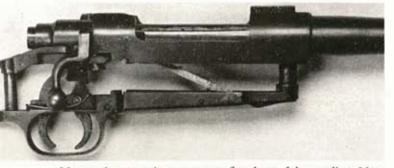
Newton's original intent was to import Mauser rifles from abroad for his special calibers. Only one shipment had arrived when the start of World War I put an abrupt halt to all such thoughts. He then contacted several American rifle manufacturers but since they were loaded with war orders, they turned a deaf ear. With the odds against him but obsessed with his ideas, he decided to attempt the manfacture of his own rifle! He sought backers and against continuing setbacks and mounting debts he fought to establish his first company.



Pilot model of original Newton action had small bolt knob typical of old rifles, and regular set triggers of foreign style.



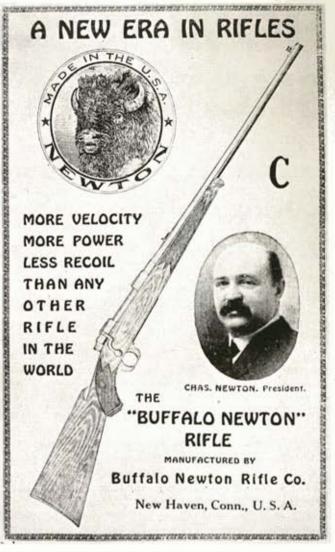
Newton's Special fore-and-aft set triggers on .256 rifle was fitted on Mausers after his first company failed.



Newton's set triggers were fitted to fair quality New Haven built rifles which in early specimens had 7 bolt lugs.

His difficulties were reflected in early Newton Company catalogs which spoke of his products in flowery words but couldn't promise deliveries except for uncertain future dates. As a stop-gap measure during the tooling-up period, Newton offered .256 and .30 Newton barrels with Springfield threads priced at \$12.50 each, no sights, to owners of Springfield actions. A sporter stock was also available at \$12.50. This gave the owner a .256 Newton sporting Springfield for \$25.00, less sights. I shot one of these and it had the segmental type of rifling as near as I can recall.

The only Springfields available for conversion at that time were of the low number variety. This would not be bad in the .256 caliber but the thought of standing behind a .30 Newton on a brittle Springfield action with added bolt thrust would not appeal to me. A bolt face alteration would be a requisite, of course. It is interesting to note the blithe statement that appeared in the Newton catalogs regarding these barrels. "They (the purchasers) can retain the original barrel and stock," he wrote, "and thus change from .256 or .30 back to .30 caliber military for target work in a few minutes." This intimated that the owner had two guns in one, and that barrel changing and headspacing were a breeze. Barrel vises and action wrenches are ignored as minor impediments.



Mottos and bombast of Charles Newton's arms company a generation ago read like modern advertising blurbs.

When the original Newton rifle finally appeared in 1917, it was a beautiful mechanism. It had smooth lines and featured the interupted thread type of locking lugs similar to the 1910 Ross. This buttress thread is theoretically very strong but only if all surfaces contact simultaneously. The present day Winchester Model 70 and earlier Model 54 owe much of their general appearance to the original Newton design. The floorplate release buttons are almost identical. However, on the Newton rifle the floor plate could be swung down, rotated at its forward end until it released the forward action screw. The barrel and action assembly was released-a very practical take-down system used now on quality English sporters. German type set triggers were used with the rear trigger setting the front to a mere touch for precise shooting. What a pity that only about 3,000 of these fine rifles are to be considered safe or acceptable.

Newton's first company was thrown into receivership on April 20, 1918. Only the first rifles, numbering some 2400, were made while Newton was with the concern. The receivers operated until August 1, 1918, and only about 400 of the 1600 rifles they produced were passed by the inspectors. These were all original pattern Newtons, manufactured in Buffalo, N. Y., under (Continued on page 47)

HOW TO CHECK YOUR SHOTGUN PATTERN

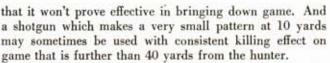
SPEEDY METHOD OF TESTING DEVISED TO REVEAL EXACT PERFORMANCE OF WEAPON IN HUNTING AT ALL RANGES

By BERT POPOWSKI

FOR 75 YEARS, after Fred Kimble accidentally fathered the correct method of choking a shotgun to control patterns, hunters groped for an easy way to find out just how their scatterguns behaved. The standard procedure was to fire upwards of a score of shots at paper targets, count the shot holes in a 30-inch circle and then figure what percentage of the total pellets fired actually hit in the circle.

But then Ken Richards, a choke maker of Gardner, Mass., smashed the time-honored, laborious pellet-counting method to smithereens. He reasoned that if a shotgun's killing pattern was to be measured by the number of pellets hitting in a 30-inch circle at 40 yards, a 15-inch circle at 20 yards would serve just as well. Then he went one step further. Why not, he reasoned, shoot at a piece of target paper a mere 10 yards from the muzzle, thus avoiding *any* counting of single pellet holes?

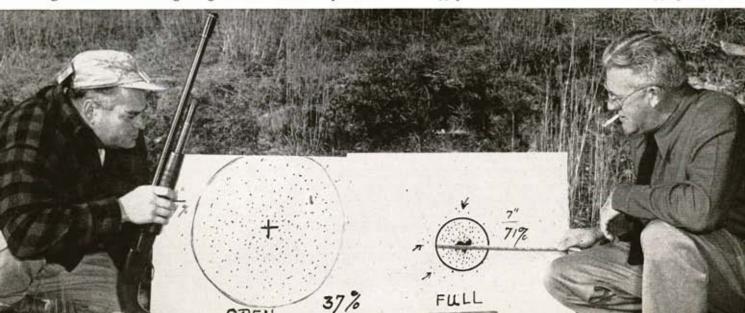
The more Ken studied his speedy method of patterning, the more he liked it. For it follows that a shotgun which scatters its load over a comparatively large area at short range is going to scatter that load so widely at 40 yards



It isn't all that simple, of course. But it is true that the quality of short-range pattern is what really tells the story of any shotgun's effectiveness at normal hunting ranges, which average out at 40 yards. So Ken proceeded to shoot a lot of patterns at 10 yards with a variety of shotguns, and then compared them with patterns which those same guns produced at 40 yards.

These comparisons soon showed that most shotgun patterns fell into four major classifications, all of which could be interpreted in the light of their subsequent performance at 40-yard killing ranges. Today's smoothbore hunter can thus fire one shot, measure the size of the pattern, compare it against the average listed on a chart worked out by Ken, and know just how well a particular load will perform in hunting. Finally, by comparing the quality of the pattern against four master patterns, he can get a very clear picture

Comparison of patterns fired by Charles Bliss of East Templeton, Mass., is made by Ken Richards who developed shortrange method of checking shotgun. Richards finds open choke fires 37% patterns which full choke fires 71% spread.



shows "ideal" dispersion of shot with few fliers. It is ideal because it has an even distribution of shot out to edge.

Even quality shotgun like Westley Richards is checked for pattern performance in manufacture. Pattern at right

of what is happening to the shot charge when it gets out to 40 yards in the hunting field.

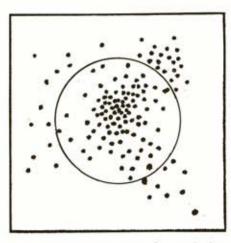
In brief, here's Ken's patterning formula: Shoot at a piece of paper set up at exactly 10 yards from the muzzle of the shotgun. Draw a circle around the resulting pattern, but do not include those shot holes which are obvious "flyers." Measure the diameter of the circle accurately. Then refer to the guide table to determine what percentage of the total load—regardless of whether it is a light trap or skeet load or any of the high-velocity hunting loads your shotgun will deliver at a normal 40-yard range.

Every capable shotgunner knows that his weapon kills by means of multiple hits; that is, by pattern. The occasional freak kills, where a single pellet brings down game through a brain or spinal-cord injury, might well be termed sheer accidents. In short, a ten-for-ten pheasant or quail shot can't pull off a one-pellet kill except by the sheerest happenstance, perhaps once in 50 shots, even if that frequently.

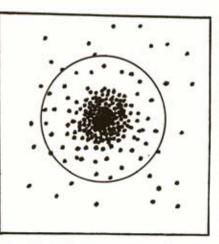
That need of multiple hits to insure cleanly-killed game

CHART OF SHOTGUN AND AMMUNITION PERFORMANCE

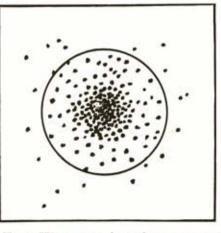
Diameter in inches of shot-formed circle on target just 10 yards from the muzzle.	Percentage of pattern in 30- inch circle at a 40-yard range.	Maximum game- killing range, of pattern in yards.
51/2	77	50
6	75	48
61/2	73	46
7	71	44
71/2	69	42
8	67	40
9	64	38
10	61	36
11	58	34
12	55	32
13	52	30
14	49	28
15	46	26
16	43	24
17	40	22
18	37	20



Type I pattern is irregular with localized fliers producing many "holes."



Type II is dense pattern with center blown out, thin edge distribution.



Type III pattern has above average quality with more even distribution.



Master-choke equipped shotgun is fired by Charles Bliss at target paper set up only ten yards off to check pattern. New patterning method would actually permit shooter to test his shotgun in basement, if he had adequate backstop.

makes Ken Richards' patterning formula doubly important. No hunter likes to come home skunked. If he is conservation-minded he'd rather miss all of his birds outright than to have downed some of them that he was unable to find, simply because they were too lightly hit to permit their retrieving. Retrieving dogs help, of course, but they're actually making up for the hunter's poor marksmanship, poor pattern, or both.

Ken Richards has this to say on pattern density as a shocking, and therefore killing, factor: "The maximum killing range column is based on pattern. Thus any shotgun user can readily tell how far any individual pattern will carry up in effectiveness on game. For instance: suppose a gunner shoots a 71/2-inch pattern at 10 yards. The chart then tells him the pattern density is 69 per cent which, in turn, has a maximum pattern-killing range of 42 yards. Beyond that range, whatever he nails is pure luck, such as a single pellet penetrating the brain, or some similarly undependable accident."

This leads to an undeniable conclusion: any shotgun that isn't being used to kill with pattern is a sorry and haphazard weapon. Occasionally it will kill at abnormal ranges; the rest of the time it is a sorry crippler. Occasionally, it is the fault of the gun, but 90 per cent of the time it is the fault of the man behind it. He just doesn't know the potential of his weapon, nor how to get maximum field performance out of it. By using the Richards method of ascertaining just which loadings perform best in your shotgun you can take full advantage of top shotgun-and-shell combinations. Despite the 10-yard range at which such testing is done, you can even tell the quality of the pattern you can expect at the normal killing

PATTERN PERCENTAGES FOR GIVEN DISTANCES

ARD		IN 50	45	40	35	30	25	20
	56	64	72	80	88	96	100	100
10	55	63	71	79	87	95	100	100
шí	54	62	70	78	86	94	100	100
0	53	61	69	77	85	93	100	100
DISTANCES	52	60	68	76	84	92	100	100
4	-51	59	67	75	83	91	99	100
10	50	58	66	74	82	90	98	100
1	49	57	65	73	81	89	97	100
	48	56	64	72	80	88	96	100
2	47	55	63	71	79	87	95	100
Ξ	46	54	62	70	78	86	94	100
>	45	53	61	69	77	85	93	100
3	44	52	60	68	76	84	92	100
FOR GIVEN	43	51	59	67	75	83	91	99
8	42	50	58	66	74	82	90	98
0	41	49	57	65	73	81	89	97
	40	48	56	64	72	80	88	96
PERCENTAGES	39	47	55	63	71	79	87	95
ш	38	46	54	62	70	78	86	94
9	37	45	53	61	69	77	85	93
2	36	44	52	60	68	76	84	92
E.	35	43	51	59	67	75	83	91
44	34	42	50	58	66	74	82	90
0	33	41	49	57	65	73	81	89
2	32	40	48	56	64	72	80	88
5	31	39	47	55	63	71	79	87
	30	38	46	54	62	70	78	86
z	29	37	45	53	61	69	77	85
22	28	36	44	52	60	68	76	84
μu.	27	35	43	51	59	67	75	83
PATTERN	26	34	42	50	58	66	74	82
4	25	33	41	49	57	65	73	81
0	24	32	40	48	56	64	72	80
	23	-31	39	47	55	63	71	79
EQUIVALENT	22	30	38	46	54	62	70	78
iu	21	29	37	45	53	61	69	77
-	20	28	36	44	52	60	68	76
4	19	27	35	43	51	59	67	75
\geq	18	26	34	42	50	58	66	74
5	17	25	33	41	49	57	65	73
a	16	24	32	40	48	56	64	72
LLI	15	23	31	39	47	55	63	71
	14	22	30	38	46	54	62	70

Pattern percentage for equivalent distance can be determined by taking percentage for 40 yards and reading gun performances at other distances on same line. range of around 40 yards if you know just what to look for.

First and most important is to know exactly what pattern the manufacturer has built into your gun. Most shotgun makers bore their barrels and mark them on this basis: Full choke-65 to 75 per cent; improved modified-55 to 65 per cent; modified-45 to 55 per cent; improved cylinder-35 to 45 per cent; and cylinder bore-25 to 35 per cent. Thus the chart of shotgun and ammo performance virtually covers the entire range of these borings. The owner of any shotgun whose performance falls outside of this chart can very easily figure its performance, both on the basis of its percentage of pattern and killing yardage.

Any interested shotgunner can figure his percentages on the basis of available killing pellets. Here are the number of pellets per ounce in the sundry shot sizes: Number 2s-88; 4s-136; 6s-223; 71/2s-345; 8s-409; and 9s -585. All else needful to know is the weight of shot carried by any load. A pencil and paper will do the rest. But, from these, it is perfectly obvious that --if the game is within killing range-the smaller sizes of shot give the shotgunner many more pellets with which to achieve clean kills.

In assessing the quality of patterns, there are four basic spreads of shot to consider:

Figure I: If you get an out-of-round 10-yard group, with a lot of localized flyers, it will denote an uneven 40-yard pattern can be (Continued on page 57)

THE WEST'S TOP TRIGGERMAN

THOUGH HIS FRIENDS EXAGGERATED IN ACCOUNTS OF HIS SHOOTING, WILD BILL HICKOK NO DOUBT WAS FASTEST AND MOST ACCURATE SHOT OF WEST





Wild Bill Hickok in 1870's was marshal of Abilene, Kansas, where he added notches to his blazing guns.



Hickok received Navy Six Colt when he cleaned up Hays City, Union Pacific terminus, in 1869. Name is misspelled on back strap inscription.

W HEN HE WAS a kid, they put a gun in his hand, and when he died they buried one beside him. In the intervening years no man ever drew on Wild Bill Hickok and lived to tell about it. For 20 years his deadly sixshooters were his only life insurance. They never failed him until that day in Deadwood when he sat with his back to the door.

More men tried to kill him than any other man in history. During his turbulent career as Union Army scout and spy, stage driver, frontier dispatch rider, and hell-town marshal, more than 100 tried to shoot it out with him and for all it was a losing fight.

Wild Bill did his shooting on the right side of the law and survived through his iron-nerved ability to shoot first and straight when the other fellow was trying to give him a ticket to Boot Hill. Like everything else about Wild Bill's hectic career, his marksmanship has been a controversial topic for decades. Just how good a shot Hickok was has been a campfire subject in every cow camp west of the Mississippi, and wherever gun-lovers gather in the canyons of the big cities.

Admiration for Wild Bill inspired some of his friends to a little pardonable exaggeration sometimes. One of these was his old companion of the trails, "Buffalo Bill" Cody, who was always ready with a story that lost nothing in the telling. In the Chicago Inter Ocean of Oct. 15, 1911, Colonel Cody authored an article titled, "Reminiscences of Wild Bill Hickok, Early Western Gunfighter." After correctly describing the magnificant physical build and panther-like grace of his friend Hickok, he wrote further:

"Wild Bill was one of the best revolver shots ever produced in the west. He certainly was the best shot in a fight. It is one thing to shoot accurately at a target and another thing to be able to shoot accurately at a man who is shooting at you. Bill was absolutely fearless. He was devoid of nerves; his mind was clear; his hand steady and his markmanship certain in the most desperate situation. He never became excited. A cool man is often a phlegmatic man; but Wild Bill was the reverse. He was not only perfectly cool but he was always alert and nimble of wit, and in action as quick as lightning."

Others have described Hickok in much the same way, but when he relates feats of Hickok's marksmanship either Cody was mis-quoted or he allowed his enthusiasm to run away with him.

"I have seen Wild Bill perform feats of marvelous marksmanship many times," he said. "With a bullet fired at ninety feet I have seen him drive the cork through the neck of a bottle and on through without breaking the neck or the sides. He won many bets on his ability to hit a silver dime at thirty feet. Many could barely see the tiny coin at that distance."

He mentions that when a tomato can was tossed into the air, Hickok drew both guns and hit it with 12 bullets before it struck the ground.

At General Sheridan's request, Colonel Cody goes on to say, Wild Bill pointed to a grocery sign 100 yards away and said he would put six bullets consecutively into the center of a letter "O." On examination is was found that "six bullets had passed through the center of the letter, each bullet leaving its distinct impression around the edges of the single hole."

With the guns and ammunition of Hickok's day, hitting a dime at 30 feet would be barely possible, but anybody who could drive the cork through the neck of what probably was a whiskey bottle at three times that distance would hardly waste time shooting at dimes. The neck of such a bottle would be barely one-quarter inch larger than a .45 caliber bullet. With the open iron sights of Hickok's day, to say that a slug of this diameter was fired through a glass circle but a fraction of an inch larger is beyond belief.

As for his putting six shots inside the letter "O" on the

signboard at 100 yards, it is rather questionable that Hickok could place six bullets in a single hole.

The accuracy of the single action .45 caliber Colt army revolver is listed as approximately a four-inch circle at 50 yards; and for the .44 frontier a three inch circle. Providing there was an eight-inch circle and the shots were carefully aimed, the above weapons would have the required accuracy for a six shot group on the target. But Cody's report is that "each of the bullets leaving its distinct impression around the edges of the single hole." This would amount to a $1\frac{1}{2}$ inch group and be very creditable shooting with a rifle. It would be an impossibility with the guns Hickok used no matter how uncanny a shot he was.

Wyatt Earp, probably the greatest of the frontier marshals and one of the bravest men who ever lived, knew Hickok and saw him perform a similiar feat. He had a somewhat different version.

Tom Lewis, writing on Wild Bill in Frontier Stories many years ago, tells of Earp seeing him shoot in Kansas City before a group of better than average shots. He used the pair of beautiful six-guns presented to him by Senator Wilson in 1869.

The distance was 100 yards here, too, and aiming at a signboard Wild Bill tossed off five shots rapidly with both right and left guns. Then he turned and said, "I was shooting at the O boys. Go over and see if I came close to it."

"I went over and looked at that O myself," Earp is quoted, "and every bullet was inside of it. It was fine shooting—the finest I've ever seen."

This was high praise coming from a man of Earp's stature and integrity as an Old West hero, particularly be-

Abilene, where Hickok carned his reputation for quick, accurate shooting, was sleepy Kansas cow-town year he died. Hickok's British Deane-Adams .450 double action revolver is preserved at Kansas Historical Society. Headboard to Wild Bill's grave was erected by friend, Colorado Charley Utter (left) at Deadwood.

cause of his great scorn for "wild west literature." But it is too bad he didn't give the size of the O. At least Earp did not claim all the shots went through a small hole.

Tom Lewis once asked four great Western figures, Wyatt Earp, Bat Masterson, Billy Tilghman, and Charley Siringo, who was the Old West's greatest shot and they all answered without hesitation: "Wild Bill Hickok."

One of the best qualified observers of Wild Bill's marksmanship was the late Robert A. Kane, gun expert, big game hunter, and editor of Outers Book, a leading early day sportsman's magazine. Writing in 1912 he recalled watching an exhibition by Wild Bill when he appeared at a theater in Milwaukee, Wis. He marveled at Hickok's deceptive speed and amazing dexterity in handling his twin Colts. He has something to say about that 12-bullets-in-a-tomatocan tossed into the air yarn, too, for that was one of his demonstrations.

The can was tossed into the air and Hickok drew both guns and put two bullets from the right and one bullet with the left into it before it hit the ground. Kane thought he could have gotten in one more if he had wanted to, but that's far different than 12.

Editor Kane called backstage at the theater where Hickok was featured in a western melodrama "The Prairie Waif" with Buffalo Bill Cody and Texas Jack. Hickok showed him his pair of silver plated, pearl handled Colt .44 caliber, single action six-shooters, which he used on the stage and a similiar pair of Remingtons with engraved pearl handles, though these were not silver plated. The pair of Colts were "tastefully engraved," Kane wrote.

Going to the far outskirts of town, Hickok gave him and some friends a private exhibition of his skill. He walked down a country road and fired simultaneous shots from right and left guns into fence posts on opposite sides of the road as he passed. (Continued on page 50)



Dispute exists about what guns Wild Bill was wearing at time of his death. Preserved in Hickok Memorial at Deadwood is a Smith & Wesson .32 rimfire "army" revolver (similar to above) which it is believed he owned when shot.



QUIPS QUOTES & QUERIES

By STUART MILLER

'Protectors of Fair Womanhood!'

THROUGH the centuries, it has been I the policy for milady to keep a few dainty but deadly weapons around for her protection. She started in using slender, tastily-engraved daggers. Then through the years she worked on through the flint lock, percussion muff or boudoir pistols, often silver or gold plated with engraving and filigree work on them. The latter half of the 19th century brought the tiny cartridge derringers. These were often in 22 short caliber, which was both considered small enough to be concealed in her purse, muff, garter, or wherever she cared to carry it, and at the same time powerful enough to perforate any would-be villain.

When the automatic pistol was being developed in the 1890's, the field of



small guns with tiny calibered cartridges was not neglected. It is hard to consider the Kolibri automatic as anything but a novelty, but even that weapon (?) would penetrate an inch and a half of soft pine, and would leave the recipient of the charge with a rather uncomfortable feeling. Other small guns were not to be taken lightly, especially when used at short range, and the shots carefully placed.

How the better-known 'Tiny Terrors' stack up with the well-known 22 long rifle and the 45 ACP can be seen in the photo on this page.

The smallest centerfire cartridge for an automatic pistol was the 2.7mm (about .10 caliber) Kolibri cartridge. When this was first brought out in Austria just before World War I, the manufacturers made a great point of what a fine defense gun it would be for the ladies. Well, it might give her a sense of security, and it might scare someone unfamiliar with guns, but for all practical purposes . . . it makes a nice collection piece! The pistols were brought out in both the single shot and also the automatic pistol. The cartridge itself is a beautiful miniature. For example, the 21/2 grain bullet is not only metal jacketed, but actually has a lead core in it. About the only thing that this centerfire cartridge lacked was a headstamp, and I am surprised that they didn't mark them. There is another version of this cartridge, the 3mm Kolibri. This cartridge was just enough larger so that it would not function in the 2.7mm weapon, and is found with a solid lead bullet.

Another tiny cartridge was the 4.25 mm Erika or Lilliput automatic pistol cartridge. This cartridge of .167 caliber was originally designed for the Austrian-made Erika pistol, which was brought out just before the first World War. The pistol wasn't too successful, even when compared with the later German Lilliput. When this latter pistol was manufactured in Suhl by August Menz in this caliber, the cartridges became known as the 4.25 mm Lilliput. Here again the gun, a 31/2 inch automatic, was primarily a novelty, though a dangerous one. Its 12 grain metal jacketed bullet could reach a velocity of 800 feet per second. For its size, the cartridge gave a surprisingly loud report. It used an unusual 11/2 grain powder charge that was a blend of black and smokeless powder. While different bullet jackets are encountered, none of the cartridges have been found headstamped. Although the guns and ammunition are all of foreign manufacture, A. F. Stoeger sold both for a number of years through his catalogs.

Next in line is the 5mm #2 Bergmann auto pistol cartridge. This was probably the first of the small caliber automatics and was brought out in 1894. When first introduced, the cartridge had no rim nor groove, nor did the automatic have any extractor. This did not prove as reliable in actual use as it did on paper, so a cartridge—the second version—was introduced, complete with extractor groove. Even with this added attraction, the gun would jam at regular intervals. The fact that the cartridge had to be fed through a metal clip charger did little to improve the performance. This cartridge could be furnished in either solid lead, soft point or metal-jacketed bullet. In its performance, the cartridge was definitely on the weak side, and the bullet seldom reached a velocity of over 580 feet per second.

The next cartridge, and the last of the small center fire automatics, was introduced in Spain in 1897 for use in the Charola Y Anitua auto pistol. As was the case of the 4.25mm Erika-Lilliput, the first gun was not popular, and when, in 1903, Clement of Liege, Belgium, brought out his pistol in this caliber, the cartridge became known as the "5mm Clement." This is a far more powerful cartridge than the 5mm Bergmann, though the bullets were about the same weights. It was also more popular and was made by a number of different European cartridge companies. The German DWM loads in this caliber used their standard pistol powder of tubular-shaped smokeless, but in order to obtain the best results chopped the powder much finer than that used in the larger caliber automatic pistol cartridges. These cartridges would give the quite respectable velocity of around 1030 feet per second.

From the 5mms with a caliber of .197, it was but a small jump to the 22 rim fires, which are usually referred to as the 5.6mm in Europe. Today, the smallest of the center fire automatics is the .25 caliber auto pistol. or the 6.35mm. The .45 Auto Colt Pistol with its 230 grain bullet makes an interesting comparison with the 2.7mm Kolibri with its 2½ grain projectile, but under proper conditions, they would both do the job.

GRANDPA'S MUZZLE LOADER COMES BACK

(Continued from page 15)

shooter, a Civil War percussion revolver with a uniform coat of rust on it when the lucky shooter finds it. A century of neglect has removed all traces of original finish. Using it for shooting will not detract from its value.

Fourth is the junk gun, little more than a frame and some major parts, none of it suitable for use as is. Through extensive gunsmith work it is possible to restore these guns to suitable shooting condition. New base pins can be screwed into the Colt frame. New parts for all the lock pieces are still available, either original or replica.

The solid-frame Remington can easily be fitted with a new piece of barrel. The $\frac{34}{4}$ " x 8" .45 barrel blanks sold by Numrich Arms Co. will finish up into a Remington barrel threading for frame, front sight, and lever latch stud. A Colt Navy barrel can be restored with a piece of rifle barrel sleeve. The chambers can be "cleaned up" to the correct caliber for the new bore.

The best revolvers for M-L shooting are the Civil War "big three," the Colt Army, Colt Navy or Remington Army. Availability has much to do with the choice. About 200,000 of each type were made during the period 1850-1870 and many are still around in shooting condition. The Whitney .36 was made in a quantity of about 31,000. The Rogers and Spencer .44, considered by many as the best of the "shooters," was produced in a quantity of 5,000. All the Rogers & Spencer revolvers were received by the Army but none issued. After the war they were sold as "surplus" in their original packing boxes. This explains why a relatively large number of them can be found today in "like new" condition. A good specimen in shooting condition of any type can be bought for from \$40 to \$70, which is just what you'd expect to pay for a modern revolver for shooting.

Most common of the M-L rifles are the late Kentucky percussion rifles, made from 1850 to 1880, and sometimes mass-produced by Philadelphia factories such as the Kreider or Tyron works. Good English or Belgian half-stock rifles are also used. The U. S. and foreign rifle-muskets of the 1855-63 period are much in demand as shooters. They all take essentially the same bullet, the .58 Minie. This hollow-based 500-grain bullet is a big chunk of lead but accurate shooting up to 300 yards has been done with carefully loaded "minney muskets." Lyman Gunsight Co. makes a mould to cast this hollow-base bullet, and the blocks will fit the regular Lyman mould handles.

Charges of powder and bullets vary from gun to gun in M-L calibers. Most of the Kentuckys or sporting rifles were rifled to handle a patched round ball. Others were made for picket bullets or longer slugs. Experimentation is the key to accuracy. A general table of loads is only a guide to base your tests on.

Loading a muzzle-gun requires a bullet mould, powder flask or horn, a box of caps or flint, and sometimes cloth patches or cup grease. Revolvers have levers under the barrels which press the bullets tightly into the chambers. They fit water and flame tight.

To load, first clear the vent of a flintlock or the percussion cone. A wire pick can be used in flintlocks or with large holed percussion guns. The cap revolver is cleared best by snapping a round of caps on the nipples of the cylinder. If this is neglected, the oil remaining in the chambers from the previous cleaning will damage the powder and cause a hang-fire or miss-fire. Then the only remedy is to remove the nipple, dig out the compressed powder and, using a fine punch, knock out the bullet from the rear.

After snapping the caps, load the gun. Holding the revolver muzzle-up in the left hand, set the hammer on half cock. This allows the cylinder to spin freely. The powder charge can be thrown either by a flask charger which is the correct size, or it may be poured into a cut-off .45 Colt case or measuring cup which has been checked out to throw the right charge for your particular gun.

After each chamber is charged, a bullet is placed on the front of one and turned under the rammer, which then presses it down. After all chambers are loaded, a daub of grease may be placed on each bullet point, which will reduce fouling. Then caps are placed on the cones, and the gun is ready to fire. Caps are put on last for obvious reasons

of safety, and also because they may fit airtight over the cones and are usually forced off in loading when the bullet is pushed down. A properly loaded and capped percussion revolver is water tight and may be kept loaded for a long time without fear of deterioration.

The grease used today was not required years ago. Then plain lead bullets were employed. Later it was discovered that a little oil softened the fouling and improved the accuracy. Some modern shooters put grease on the bullets with the idea that it will prevent any "double shotting" or simultaneous discharge of two or more bullets from their revolver. This shibboleth is almost as old as the design of Colt's revolver, and arises from a curious historical situation.

Back in the Florida wars of 1835-45, a number of Colt carbines made at Paterson, N. J., were sold to the government. With the exception of the first couple of hundred in this model, almost all were made from steel which was damaged in manufacture and weakened. Possibly the guns were not proved with enough powder, or possibly they became weakened during firing. There were many accounts of burst cylinders in the hands of soldiers during that campaign. One man even picked up a piece of metal in his head from a bursting cylinder and died as a result. The rumor got started that the guns would "double shot."

Without basis in fact, the rumor still persisted during the Civil War. Colt model 1855 revolving cylinder rifles, which of course had to be held with the left hand out on the forearm like a common rifle, were supposed to be dangerous. The idea of two or three balls being accidentally fired into the left hand of the shooter was enough to make men uneasy about using these guns. Colt designed a brazed-on blast shield and this alone gave currency to the idea—why, even the factory recognized the danger! Actually, there was no danger.

To test the theory that side-flash from the chamber front would ignite adjacent charges, I poured powder entirely around the chamber front of my Navy Colt. My gun is a new revolver built up entirely from "war surplus" components which had not been assembled into a gun before. Some powder dropped off the cylinder front when I extended the gun down range, but plenty was left. I fired one shot. Then I checked the cylinder. Much unburned powder was still on the front of the chamber—the side flash had not ignited any. This confirmed one of Sam Colt's experiments of 1840.

Then I took the cylinder of a Colt .56 revolving rifle and loaded it securely with .58 minie bullets and about 50 grains of black powder per chamber. I poured black powder over the entire chamber front until no metal was visible. The cylinder was set outside. From behind some protection, I touched the powder off. The normal whoosh! and curl of white smoke from unconfined black powder was the only result. The charges all were unfired. I put the cylinder back in the gun and later fired those shots at the M-L range holding the rifle in the usual manner. A further confirming accident happened with a .44 Remington. This was a new revolver with 100 percent original blue on it, including the insides of the

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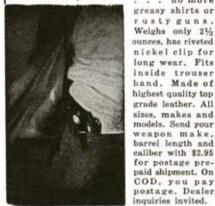
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chambers. I loaded it with bullets cast in the .44 H Colt Army 1860 mould. I fired one shot. All the other bullets started forward from their own inertia in the oversized chambers. To rotate the cylinder I pushed the bullet noses back into the chambers with my fingers as they were that loose. After firing two more shots and going through the same routine, I gave up and snapped off the rest of the shots into the dirt. The .44 H Colt bullets were simply too small for that particular cylinder in the Remington. If side-flash was any critical factor, the hot gas of the burning powder would have leaked back and set off adjacent charges, but it didn't.

I have had revolvers double shot on me. One was a Remington so worn in the cylinder-frame clearance that the cylinder slapped back in recoil, and the cap which was loose on one nipple set back against the standing breech and fired another chamber. I have had the same thing occur with a Colt 1860, where over-sized caps, pinched to make them fit the smaller nipples, were loose enough to fire. Pinching will crack the cap brass. If the cap is loose, it will not remain pushed fully forward on the corroded, worn original percussion cones. When it slips backward as far as the standing breech will allow, sideflash from another cap may set it off.

This happened to me while shooting a Webley percussion revolver, one of the models without adequate shoulders between the cones and with no standing breech to the rear. The chamber to the left of the barrel chamber also ignited. The bullet flew forward and was stopped by the loading lever momentarily. The fired bullet flew two feet high from the exaggerated kick, while the gases of the left chamber evacuated through the nipple, right back at my face!

Fortunately I was shooting that gun lefthanded. I saw a blossom of bright orange flame an instant before anything except some gas struck my eye, and the presence of brass and powder burns on the outside of my eyelid indicated I had time to flinch before the gas hit me. It was all over in an instant. Yet of the five shots in the cylinder, only two exploded: one which passed out the bore, and the other to the left. The three other bullets showed enough gas wash on them to have fused the lead. If sideflash was any problem, they would have exploded too.

What did happen was simple to imagine, though I did not reproduce the experiment to test my conclusions! The rather long cones protruded beyond the level of the scanty shoulders between chambers. The oversized American caps were pinched to make them stay on. The flash over happened from one cap to another.

The absence of a standing breech on these guns is an especially dangerous matter when you consider the English percussion revolvers for shooting. Many guns in fine condition are available, but the standing breech was patented in England by Colt in 1849, and it was not till the 1860's that the English manufacturers dared to infringe on him . In America the English Adams revolvers made by special contract with the Massachusetts Arms Co., were identical to their London prototypes, except they have extra pieces fitted to protect the shooter from cap back-flash. But a properly loaded Colt or Remington revolver in good condition will not back fire, grease or no grease.

Bullets for front-loaders may be .38 and .45s cast from ordinary moulds, or the original all-iron Colt moulds can be used. The original moulds are collectors' items today. For less than the cost of the original you can buy a new Dixie, Hensley & Gibbs, or Lyman mould casting a round ball or a conical bullet similar to the old style. The Serven Gunroom of Santa Ana, California. has had for sale moulds like the six-cavity .30 caliber armory gang mould which may be cut out to larger calibers. Six in one pouring speeds up bullet making for your weekend shooting. Ordinary moulds cast one, or at most two, bullets.

Percussion caps run \$4.05 a thousand for Winchester Stavnless No. 11 and 13, which are right for pistols and some rifles. Musket caps made by Eley in England are imported by Ed Howe of Coopers Mills, Maine, or dealers in specialty gun supplies. Staynless caps are recommended as they are corrosion resistant like Winchester priming. Remington caps are sure-fire but will cause rust if cleaning is neglected.

Black powder, and black powder only, is used. It is in a pretty irregular supply- anddemand market right now. Recommended retail price for a pound canister, set by the DuPont company, is 75 cents, and \$3.40 and \$11.80 for the 61/2 pound can or 25 pound keg. But there is a joker-these prices are FOB Hillside Junction, Penn. Freight is extra and many cities have explosives laws which may mean a reshipment outside of the town of delivery, or even prevent commercial transfer of black powder to a store in that town. Members of a club get around this by ordering in bulk and then splitting the shipment among a dozen or more shooters.

Fg and FFg powders are used for muskets and rifles. FFg and FFFg work okay in handguns, the latter burning more evenly in the short barrels. FFFFg is used mostly for flint lock gun priming as it takes fire easily. The old powders had colorful names -"Hazard's," "Kentucky Rifle Powder," "Black Diamond," but today the DuPont company is the only maker of black powder. I have heard of grinding coarse blasting powder to finer granulation in a corn grinder, but this is NOT recommended. Black powder is very touchy stuff and is a quick way to lose your eyebrows, or maybe your eyes and hands. Making black powder is definitely not a laboratory experiment. Separately the ingredients are harmless. Together they are, to corn a phrase, "dynamite."

Everybody talks about the high cost of shooting, but like the weather, nobody does anything about it-except the muzzle loading shooters. With warm weather coming, the times are near to get down the old muzzle loader and brighten her up for spring. You'll find surprising accuracy, real shooting satisfaction, and maybe learn a thing or two with the muzzle gun. When you sight across those wide open Kentucky sights, and press the iron trigger, and the cock falls and the pan flashes, and then you wait a brief eternity for the main charge to ignite-I'll guarantee you will get rid of that old flinch in jig-time, and start shooting ۲ straight.

CONTROVERSIAL CARTRIDGE

(Continued from page 19)

to shoot. I feel that the Ordnance Corps should think more along these lines. If penetration is wanted, a tungsten core in the 9mm MARS cartridge should do wonders. If knockdown power is needed, a double barreled shotgun-slug pistol such as those used in India to shoot tigers at close range might be issued."

Killing people is an inexact science, like medicine. The proper dose for one isn't always right for another. Any slug through a vital spot like the brain is a perfect stopper and killer, and it doesn't make much difference what the caliber or velocity is. The .45 ACP accurate range is listed at 75 yards while the Germans consider the 9mm range 125 yards. Average shooters might reduce the figures by 50 percent, or even more for the .45.

This loud-mouth exhibitionist is difficult for even experts to use. Few servicemen rate as high as "mediocre" gun slingers, a major cause being restrictive gun laws in many states. The military simply hasn't the time to make expert pistol shooters while teaching the arts of war to millions of civilians.

But rookies can add precious points to pistol scores with a 9mm and have confidence in their gun that will make more efficient fighting men. A quarter inch difference in bullet placement can make the difference between sudden death and a flesh wound.

Another important factor in weighing the relative merits of 9mm and .45 is ammunition weight and bulk. The military moves millions of tons of supplies to the far corners of the world by land, sea and air, sometimes under fire. A 2,000 round case of .45's weighs 111 pounds against only 56 pounds for 9mm's. A 50 percent weight reduction would save tons of critical material for other war use, plus saving precious space.

High brass reported 50,000 rounds were used to bump off one Red soldier during the Korean "police action." Assume it was all .45 fodder rather than heavier types. Simple arithmetic shows 2,775 pounds of ammo with a commercial value of \$5,400 was necessary to lead down one Red. At one stage ammunition was actually rationed because we couldn't deliver enough to the right place at the right time.

Although far more 9mm ammunition than .45 can be carried in the same cargo space and provide more firepower, the Secretary of the Army has issued the edict that all work on 9mm light weight pistol development for the armed forces be stopped. The Secretary of the Army has disapproved a scheduled 9mm pistol design open competition "due to the present number of cal. .45 pistols on hand, and can foresee no requirement for procurement of additional pistols in the immediate future. For this reason the Secretary of the Army has directed that the project for the development of a light weight pistol be cancelled."

Where is the logic then in killing the light-weight pistol project, when millions of dollars have been already spent on research and development? If stocks of .45 automatic pistols are adequate now, they were adequate in 1945. Why, if the supply is

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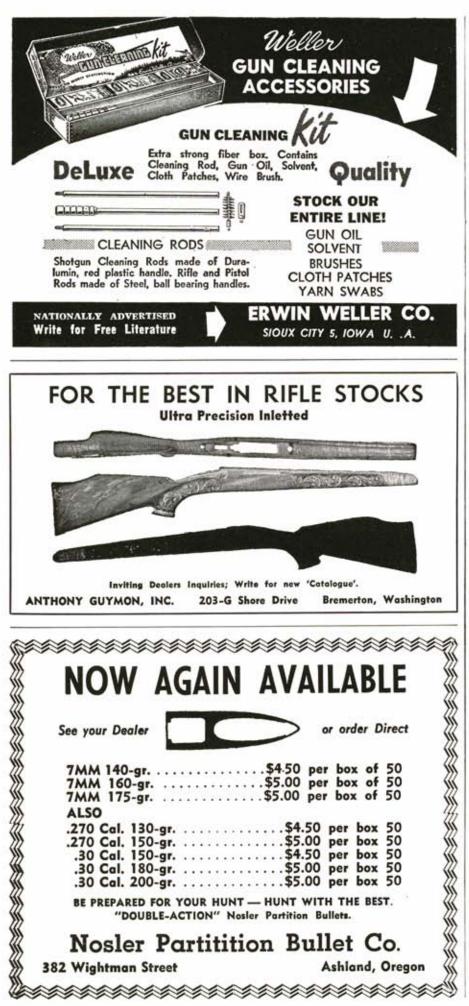


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so adequate, was the project even started? Actually, the 9mm project has fallen victim to a hidebound fanaticism—".45-itis."

The .45 auto is basking in the reflected glory of the most famous man-stopper of all time, the black-powder .45 Long Colt. With 40 grains of guts the .45 L.C. pushed a 255 grain soft lead slug along at 900 f.p.s. Stoping power was tops then for a handgun. Our service arm made such a good showing because it replaced the .38 Long Colt, ineffective in stopping hopped-up Moros in the Philippines hell-bent-for-Paradise with an infidel or two as their tickets. The .45 had good "stopping power" but the other side of the coin holds true as well. Many incidents are on record of the .45 failing to do the job.

General John R. Hodge told me an experience which came to his attention some years ago. A GI pulled a knife on an MP who was armed with a .45 automatic and the latter got nervous and emptied seven shots into the knife-wielder, four in the body cavity and three in the legs. The knife artist walked to the bus to go to the hospital. All were jacketed .45 slugs at close range.

Several years ago the Army Field Forces set up a requirement for a service pistol smaller and lighter than our old reliable .45 Colt Model 1911A1. The United Kingdom and Canada joined in the formulation of requirements for a new pistol, which would have become adopted by member nations of NATO as the light rifle cartridge developed in the U.S. has been so adopted.

The 9mm finally approved called for the Parabellum or Luger cartridge with a loading of about 1360 feet per second. Winchester white-packaged "Parabellum" ammo made for the Army during this time is listed as producing 1400 f.p.s. at 15 feet from the muzzle with a relatively light 115 grain bullet. Other requirements, in order of desirability, were:

Reliability equal to or better than the .45 Colt,

Prescribed accuracy, but the factor of accuracy or necessary grouping ability is not stated in the published release.

Maximum weight of 28 ounces, magazine empty.

Safety, under various conditions.

Simple design, easy to repair and clean.

Useful range of 50 yards.

Minimum recoil effect on the firer.

Minimum magazine capacity of 9 rounds. Various designs were prepared to meet these requirements. The Colt Commander, a shortened version of the old .45 but with light alloy frame in 9mm and .38 Super, was produced. Its issue on the commercial market seems to have occurred after it was rejected by the government.

Smith & Wesson also prepared several models using light alloy frames, in both double and single action. The Smith & Wesson design suggests strongly the Walther P-38 with a Browning slide. The muzzle bushing of the Smith & Wesson is a complex design exactly like the original muzzle bushing of the 1935 Browning (Belgian) High Power 9mm pistol, a design which was discontinued after about 300 pistols had been made. The slide design of the more common Brownings, Radom, French MAS and Mdle. 1935A and S, the Swiss SIG and other weapons indicates a general preference for the solid front instead of the expensive and unnecessarily complex muzzle bushing of the old Colts and the Smith & Wesson 9mm.

The Brownings wanted Colt to manufacture the Hi-Power 9mm in 1935, but they refused. Had the decision been different, the 9mm might today be our standard cartridge.

A little known auto pistol designed by Ozzie Sunderland, one of the engineers who worked under the aegis of the great Gus Swebelius at High Standard, was the "T-3." It, too, had a light alloy frame, and a 14-shot magazine. A very light pistol of blowback design and with a double action feature, it was prepared for the Air Corps. Unfortunately, the straight blowback produced a very heavy recoil and the gun was not adopted in 1948. But still the 9mm continued to be worked with.

Russia is thought to have adopted a 9mm pistol, with the big magazine of the M1935 Browning, but the appearance of the SIG Swiss pistol. The SIG, a well-finished 9mm arm made at Neuhausen, is supplied to the German border police and is popular in Sweden. Experimental pistols exist, light in weight, designed by men famous in the firearms field, backed by reliability and manufacturing experience second to none, and all in 9mm caliber. Tomorrow's auto pistol generally is here today.

The proper shape jacketed bullet would give vastly more effective stopping power than the present sugarloaf shape. The Army test cartridge, probably called the "Cartridge, Ball, cal. .35" is loaded in the Remington Luger case with a flat nosed sintered iron bullet. Actual ballistics on this are classified, and as only one sample was available to study it was not practicable to shoot it. However, it and the Harvey handload 9mm bullet are very similar in shape. The sugarloaf bullet was designed to function in a great variety of automatic weapons without jamming. Yet the proper jacketed bullet will give better stopping power, and I can't understand why the U.S. has refused to accept a more effective "chunky" shape that would have little effect on velocity at combat range.

The next advance in handgun efficiency will be better powder. If a propellant could be developed which would give present efficiency in a smaller case, the 9mm would really bloom. Right now the .38 Colt Super cartridge is loaded to "normal" pressures which are lower than Magnum, but with velocities which are close to actual Magnum speeds. The bullet weighs 130 grains.

I have a confidential tip that one company is trying to develop a powder that will permit higher velocity with less pressure. It's not a bad idea, as current powders are a half-century old. The project is hush-hush, and they have a big problem, because in short pistol barrels it can't be a progressive burning type.

Powder and bullet development would certainly go a long way to boosting the 9mm Luger all over the world. Adding about 100 f.p.s. to the new 9mm will give 460 footpounds in a 4" barrel, compared to only 366 foot-pounds with Remington ammo in a $3\frac{1}{2}$ " barreled Magnum. It's about time someone came up with a decent Luger bullet and load which will make the 9mm the No. 1 pistol cartridge in the U.S., as it is in every other country in the world.



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MY HEART TROUBLE

(Continued from page 28)

out restrictions of any kind at all.

I was remembering that brush with death while I rolled down my sleeve and the doc stowed away his pressure gauges. "Never again," I thought, "grounded."

I was anything but happy, but I was consoled somewhat by the fact that now I'd be home at nights and on weekends and could go into bench rest shooting like I'd always wanted to. But it was hard to grow accustomed to being home all the time, too, after 20 years of touring the country. But bench rest shooting helped me get over that helpless feeling.

I found out there were a lot of other guys in my shoes, too. And bench rest seemed to appeal to them, also. For instance, there is Ted Holmes of Mattoon, Illinois. Ted was a farmer, I believe, until he had a heart attack. He had always liked to shoot and was active in bench rest shooting competition. After his attack he opened a professional gun shop and makes wonderful guns. He builds rifles and makes bullets for precision shooting, and is ranked among the first 20 in the country in bench rest shooting.

Barney Auston of Tulsa is another fellow with trouble in his plumbing. Oddly, Barney was a plumber before he had to slow down, but I don't mean this to sound funny. He suffers from the reverse of my condition low blood pressure, and often has trouble with spots before his eyes, breathlessnes and an occasional blackout. He now has his own gun shop and makes precision stocks and equipment. He also makes a patented mechanical bedder which is used on the front of the stock to maintain an even, measurable pressure on the harrel. Barney shot a group in competition last year that was almost a world's record.

Then there is Joe Palmer, a cashier at the First National Bank in Tulsa. Joe has some kind of heart trouble, but it doesn't interfere with his shooting. He's one of the guys to beat at any target shoot.

Another wonderful gun interest for people with heart trouble is collecting. I got interested in collecting guns before my heart trouble after visiting the Davis Collection in the Mason Hotel in Claremore, Oklahoma, Davis has the world's largest collection of firearms and keeps about a third of them on display in the lobby and halls of the hotel.

I started picking up guns while killing time between flights. The first one was a 9 mm Luger. Some of the best antiques I've had were a 3rd Model Colt Dragoon, an 1855 Springfield Dragoon pistol, a W. L. Evans Valley Forge pistol, and a Whitney Walking Beam Model revolver. The Whitney was the only one I've ever seen, and like a damn fool, I sold it.

Tve still got a few old guns: a Philadelphia Deringer, a couple of Remington Elliott derringers, and some .45 caliber Colt singleaction revolvers. I think the one I like the best is a 16th century Austrian air rifle that still shoots. You pump the stock full of air and it shoots a pretty good-sized pellet. But the best 'antique' I ever had was one

But the best 'antique' I ever had was one I made. I was fooling around in my shop one night and decided to make an old-looking cap-lock pistol to hang on the wall. I used a section of an old 45-70 rifle barrel and some parts from several broken cap-lock actions. Then I made a stock out of maple wood and a trigger guard out of some black iron. When it was finished it did look reasonably authentic, but I wasn't trying to kid anyone.

About that time I ran an ad in the paper offering some of my guns for sale, and a guy comes in one night. He looked over my real guns and finally spotted the 20th century 'antique.' I told him it was a fake, and that I'd made it myself. He just laughed at me like he thought I was pulling a crafty sales talk and insisted on buying it—said he knew a genuine antique when he saw it. Well, what could I do? I almost decided to go into the antique-making business after that.

But then I caught the bench rest bug. Half the fun of bench rest comes from experimenting with new ideas in guns or ammunition. It's a hobby you can enjoy tinkering with at home in the garage when the weather's bad or television's lousy. And if you like to travel, there's always a match going on some place in the country.

The basic idea of bench rest shooting is to 'dope' out a gun-ammunition combination that will put 5 or 10 bullets into the same hole at 100, 200 yards or 300 meters. No one has ever done it yet, but Paul Dinant came closest to it in a match at Permian, Texas, on May 7, 1950. Dinant shot five .22-250 bullets into a hole measuring .1057 of an inch between centers of the widest-spaced individual holes in a 100-yard target.

When you become a 'doper' like that, you've done something to be proud of. 'Doping' is bench-restege for figuring out wind and mirage after you've built yourself a rifle that throws bullets so accurately your groups can be completely covered by a dime.

The sport is interesting, too, because there's always a world's record to shoot at. During September of this past year in Tulsa, we saw two 'dopers' turn in possible world record groups. Barney Auston and George Herman from Omaha, Nebraska, are waiting for confirmation of their single-target groups by the National Bench Rest Shooters' Association. At the national match in Johnstown, N. Y. a new national course aggregate record was set by Sam Clark, Jr. of Waterville, Maine. Clark shot ten 10-shot groups, five at 100 yards and five at 200 yards, for an average of .4098 inch! That means he fired 100 bullets through a hole that could be covered by a dime easily. A dime measures about .71 inch in diameter. The second-place winner, Warren Page, had an average that measured less than 6/100 of an inch larger than Clark's.

For those who would like to get into this sport I think the record book is the best starting point for building a rifle. At the 1955 national match, 72 shooters used the .222 caliber cartridge, 62 used the .219 Donaldson Wasp (modified Zipper), 12 used the .22-250 and 2 used 6 mm. I think the main reason so few use the larger bores is because it costs a little more per bullet, but there seems to be a trend to the larger guns since some of the experts seem to think they've done about as much for the .22 as possible.

Most of the top 10 winners used barrels made by Douglas, Hart, Pride or Apex. Actions were Remington 722, Weber or FN Mauser. Bullet swages were Biehler & Astles and Wilson, Sierra, Speer or Ted Holmes bul-



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lets were used by the top shooters. I'm building my fourth bench rest rifle now. Before deciding on my equipment, I try to fully understand the importance and mechanical details of the various parts, Most 'dopers' consider the standard military actions too light for accurate shooting. At the 1955 National Match, the FN commercial actions had been given additional stiffening through filling the magazine hole or something similar. Taylor & Robbins developed a very effective reinforcement modification for this popular action. I have stiffened the action I'm using by machining a steel filler plug for the magazine opening.

The barrel is a Hart job, weighing between 9 and 10 pounds. I like that weight as it will bring my gun up to about 23 pounds with the scope mounted, which is just about right for me. A Canjar single set 3ounce pull trigger is next. Some shooters prefer a heavy, standard trigger if it is crisp, but I like one that takes only a couple of ounces to release. Since the whole idea is to keep the rifle steady on the bench, a set trigger seems logical.

I'll probably bed this new rifle in one of my old stocks, fitting an Auston mechanical bedder. Scope is my 24-X Unertl. Caliber is .219 Donaldson Wasp using DuPont 3031

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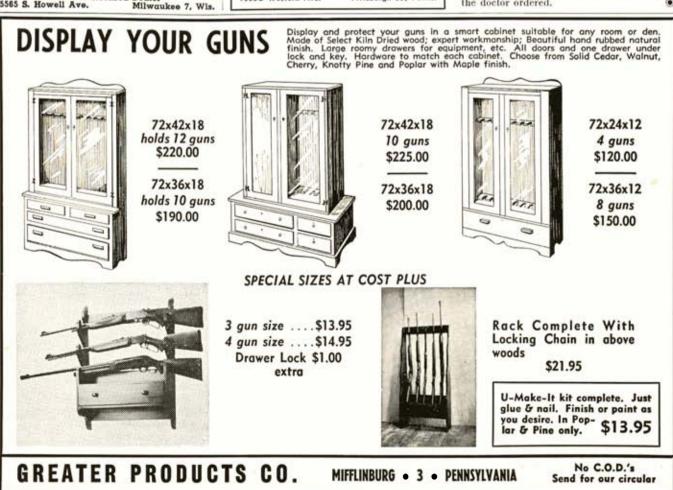
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powder. I don't have the taintest idea what charge and won't know till I get the whole works together and out to the range. Going by the record book, 24 to 26.2 grains of 3031 won for the top ten at the 1955 Nationals and my load ought to be somewhere in that hracket

Bullets have to be swedged to match the barrel. Slight variations in manufacture, even in the most perfectly made bullets and barrels, must be matched up by shooting. A "tight" barrel in a given caliber may mean that the bullets from one maker are a little snug and need to be squeezed down. If the barrel is "oversize," the bullets should be upset to fit. This is an oversimplification but about describes what has to be done.

I use Sierra hollow point bullet cups and make my own bullets. Store-bought lead wire I draw to a size that will just fit the cups tightly. Then I form the bullet in my Biehler & Astles swaging die. If I want a slightly larger bullet for an "oversize" barrel, I just put a little more pressure on the die. If I find the bullet after firing has a fin on the hase from the rifling, it was too big, or improperly lubricated during the process. This means some range testing and most every 'doper' has his tools with him and can make up a batch of bullets to specifications in a matter of minutes. It's all in the game.

As you can see, for a fellow laid up in drydock, I go overboard for bench rest shooting. I sometimes dig out the 12-gauge and bang away at skeet, too. Blasting at paper or clay targets lets a fellow blow off steam without a lot of sweat. And that is just what the doctor ordered.



FIRST WILDCATTER

(Continued from page 31)

the name "Newton Arms Co., Inc."

The rejected rifles were then purchased by the New York dealers who attempted to sell the defective rifles under the name "Newton Arms Corporation." This dealers' company went bankrupt in July of 1920 and sold the remaining guns to another company, thus accounting for the final 250 of the original style rifles. This unfortunate sequence of affairs gave the Newton rifles a had name. But it was the war that played a big part in the failure of the original Newton Company. Were it not for that, I believe Charlie Newton could have made a go of it.

Around 1923 Charles Newton moved from his Buffalo residence and settled in New Haven, Conn. Before leaving he had published a small stop-gap catalog which offered nothing to sell but whose main purpose was to explain and warn about the release of the defective rifles. Shortly before 1923 Newton had a batch of imported .256 Newton Mausers delivered in Buffalo, They had the later Newton style of opposed set triggers with Newton stock and barrel contours. Bolt handles were of the flat Mannlicher style and these postwar rifles were marked "Chas. Newton Rifle Co., Buffalo, N. Y." on the top of the barrels.

This second corporation was the only one to use Charlie's first name. A few of the Mausers had stainless steel barrels and were so marked just ahead of the receiver ring. I have one of these 1922-23 Mausers which is extremely accurate and have seen several others, all of which showed good workmanship. The light colored stocks were stamped "Made in Germany" just behind the pistol grip cap. Some backers of the second legitimate Newton company received these .256 Mausers as a form of reimbursement when Newton moved to New Haven, Various dealers and former stockholders around Buffalo had them for sale for as low as \$25. I believe I bought mine around 1939 for \$35 and that was about the latest date that I saw these rifles for sale.

The rifle made by Charles Newton's New Haven concern was similar to the original style but of a simpler design. I much prefer the original model. Newton called his second design "The Buffalo Newton Rifle" although it was never made in Buffalo! The bolt handle had a double bend similar to the 1917 Enfield but smaller in overall proportions.

This rifle featured Charlie's second patented type of set triggers which were of the opposed type with the front trigger setting the rear. Production models used the previ-



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ous type seven lug interrupted buttress thread locking system but the early drawings reveal that his original intent had been to use a finer thread with 14 locking surfaces. The conventional "Z" magazine spring was replaced by a pivoted pressure arm activated by coil springs, somewhat like the Ross rifle magazine. The floor plate takedown system was almost identical with the old one but it had a new rear lock having a glaring weakness. With any kind of a close fit or after slight setback of the recoil plate, the recoil was transmitted to the rear action bolt. This caused many split pistol grips on both Newton rifles, especially with the recoil of the powerful .30 and .35 Newton cartridges!

These two fine calibers were smashing big game loads. The "Buffalo Newton" rifles sold for \$60 in calibers .256, .30, and .35 Newton and .30-06. Just before the failure of the final concern, Newton introduced but never produced the "Newton Straight Pull Rifle."

The straight-pull was an unusual mechanism. The idea was born while Charlie was still in Buffalo with his original company. Newton had an extremely prolific mind and his inventions were really attempts to combine the best features of all the best rifle mechanisms. He seemed to favor the Mauser. Ross, Springfield, Enfield and Lee in his designs.

Newton took an active part in the early "bolt versus lever" writing controversies in sporting magazines. As a "wildcat" cartridge experimentor, he was an ardent reloader. He furnished low cost straight line loading tools while he was in Buffalo to sell under \$5, I have one of these in .30 Newton caliber. The fact that case stretching in the lever action rifles precluded reloading was one of the reasons he disliked them. He did, however, admit that the lever guns were faster, and adapted to left hand shooters. Intrigued with the fact that the straight pull Ross rifle offered bolt action strength with fast two stroke motion, he sought to remedy the weak extraction of that rifle by incorporating the camming action of the turn-bolt action. The

top-pivoted rocking handle of the Winchester-Lee straight pull suggested the answer

Charlie set to work and designed a unique rifle bolt system whereby a top pivoted bolt handle with a forward projecting upper arm turned the bolt cylinder by means of twin hemispherical studs which engaged matching recesses in the side of the bolt. Did it work? It certainly did! One of Newton's associates told me of handling one of Charlie's test models, a converted Springfield or Mauser which Charlie described as "a real corn shucker." The rotation of the bolt cylinder was reversed, of course, and turned to the left. This idea was shelved when Newton left the original concern.

The "Buffalo" Newton Rifle Company in New Haven had an advantage over the original concern because an established cartridge company, Western, was finally manufacturing the .256, .30, and .35 Newton cartridge. The first company was handicapped since they had to purchase cases in 10,000 lots from the Union Metallic Cartridge Co. (Remington) and hand load them in Buffalo. Yet in spite of the availability of Western cartridges in all the stores, the second company was about to fail. To arouse interest Newton at this time enclosed a sheet insert in some of his New Haven "C" catalogs which stated that he was discontinuing the "Buffalo" model to produce the "Newton Straight Pull Rifle," a drawing of which was shown. The remaining bolt actions were to be sold out at \$35 each with the new rifle to list at \$60. He claimed the straight pull guns would be made by Marlin on contract.

The "Meeker Rifle Co." entered the picture at this time. Amid confusion similar to the failure of the first concern, the remaining "Buffalo" model New Haven parts were assembled and sold by the Meeker Rifle Co. around 1926.

In the years that followed, Charles Newton continued to work on his straight pull design, and improved it somewhat. The extractor spring was mounted on a sleeve as on the Mauser and original Newton, and the multiple locking lugs were replaced by conventional solid lugs. The cocking mecha-



nism was revamped on a leverage principle and bolt handle refined for better leverage and camming action. Lacking finances to produce this "Lever-bolt Rifle," Newton joined a group of would-be investors around 1930 which sought to again interest the Marlin Rifle Company in producing the rifle. Calibers were to be .256, .30, .35 Newton and .30-06 plus the old semi-experimental .280 Newton (on the .30 Newton case) which was abandoned by the Buffalo, N. Y. concern before it was ever produced. Marlin was not enthusiastic and wanted proof of public demand in the form of a prepaid order for at least 500 "Leverbolt" rifles.

In 1931 a catalog was issued which practically duplicated the "Buffalo Newton" catalog "C" with the exception of the rifle drawings which showed the "Leverbolt" design. A pink sheet titled "Special Notice" put the future of the "Leverbolt" design in the hands of the shooting public. The notice stated that customers could order a rifle in the caliber of their choice by completing an enclosed order blank and sending \$25 to the Bank of New Haven who would credit the customer in their books.

If 500 such orders were received, the rifle would go into production and would be sent out to customers C.O.D. for the balance of \$35. If not enough orders were received, the bank would return the customer's \$25 down payment. The Leverbolt Rifle Company could never touch the down payment until a shipping slip had been issued to show that the rifle was delivered. This little fairy tale never had a happy ending and the Leverbolt Rifle Co. of New Haven faded away.

Charles Newton spent his happiest days around Arcade and Delavan, N. Y., where he did his earliest experimenting and dreamed of eliminating the high trajectory of the then-current low velocity cartridges with speeds of 3000 feet per second and more. From those early days to the time of his death, he never lost his interest in guns. He even proposed to eliminate shotgun "lead" as he had eliminated trajectory in rifles, with 2,000 feet per second shotgun loads in brass shotshells!

He tried drilling holes in a shotgun muzzle to compensate for the jump and kick years before Colonel Cutts invented his muzzle brake and the various forms of choke-compensator attachments for shotguns became standard. He even started to design an over/under side-break shotgun with strength to handle his high velocity shotshells . . . but that, like his cartridge and bullet experiments, is another story.

For a man who was a failure as a manufacturer, Charlie Newton was a personal success. There are some who did not agree with his ideas, but his many close friends held him in the highest regard. There still lives in Buffalo and New Haven a small circle of people who knew Charles Newton, knew him well, as the little lawyer from Buffalo who ushered in the whole modern era of high-power cartridge development. His guns and cartridges are still prized and used by hunters and lovers of fine rifles, when they are lucky enough to find one ... "\$75 or make offer ..."

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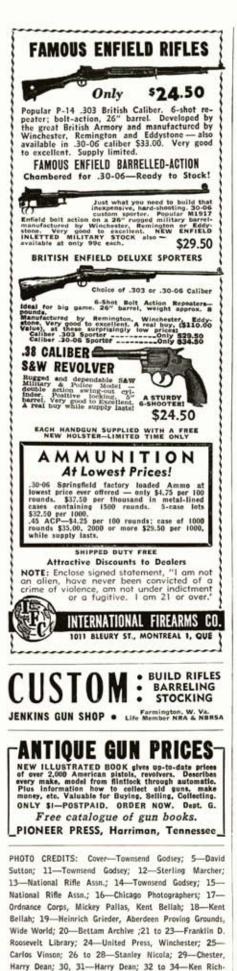
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THE WEST'S TOP TRIGGERMAN

(Continued from page 37)

Standing between telegraph poles 176 feet apart, Hickok drew and fired, hitting the first, then spun on his heel and hit the one behind him with a lightning fast motion which blended both reports almost into one.

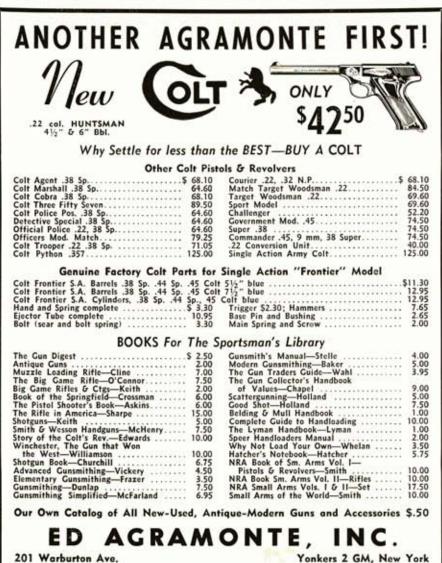
All through his performance as he smashed bricks on top of fence posts using right and left guns alternately with ridiculous ease, or kept a tin can rolling down the road until his guns were empty, it was the amazing grace and relaxed proficiency which impressed Kane. His accuracy was instinctive, effortless, and as deadly as a bolt of lightening.

Kane came away from that demonstration convinced and ever afterward referred to Hickok as "the peerless master of the hand-gun." Forty years later Kane was still writing: "The writer has himself seen Mr. Hickok shoot, using a Colt single action revolver in either hand, firing simultaneously or alternately, and I'm prepared to believe any story of his skill which does not conflict with the laws of gravitation or physics."

The tomato can shot referred to above was part of this informal exhibition, and Kane said it was thrown about 30 feet into the air at about the same distance from where Hickok stood.

Another reliable witness of many exploits of Wild Bill was Colonel H. C. Lindsay, both in the Civil War and afterwards on the plains. He relates an incident in William E. Connelley's great Hickok biography, "Wild Bill And His Era," of a buffalo hunt with Wild Bill on horseback. Hickok, after shooting an elk, rode over to bleed the carcass. After he dismounted, the horse moved close to the elk's hind feet with the bridle reins dragging. At that moment the elk suddenly revived, for Hickok's shot had only creased it, and after a few kicks it leaped to its feet but with the reins of Wild Bill's horse caught on one leg. The animal started to run dragging the horse along. Hickok drew his six-gun and with one accurate bullet severed the rein strap and freed the horse. He then remounted and gave chase to the elk and killed it with another shot.

This sort of thing was instinctive with Wild Bill, who had practically cut his eye-teeth on



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a gun barrel and was a partisan in the bloody Kansas-Missouri border war before he was old enough to vote.

His father, William Alonzo Hickok, had studied for the ministry, but ill health forced him to migrate west in 1834. The Hickoks were Vermont pioneers, and descended from patriots who fought in the Revolution with Ethan Allen.

Wild Bill of the frontier was born James Butler Hickok on May 27, 1837, at Troy Grove, Illinois. It is said that he owned a flintlock pistol when he was eight years old, and at 18 had defeated all the crack shots in the district with a percussion revolver. He killed wolves for the bounty to help out his widowed mother.

In 1855 he set out on foot for the western frontier and landed in the middle of the Kansas-Missouri border war which was brewing over the slavery question. In 1856 he was a member of General Lane's Free State Army or Kansas "Red Legs" organized to combat raids by the Missourians into Free-State territory. As General Lane's bodyguard he was active in all the major operations of the Free State militia. In this deadly guerilla warfare, young Wild Bill's nerve and courage was tempered to a steel-like hardness, and his gun-speed sharpened in the wind of whistling bullets. Accuracy on the frontier was an absolute necessity, not a fad or a hobby.

But Wild Bill was never a ruthless killer or the brawling bully as some of his critics pictured him. He was soft-spoken and fond of fine clothes which fit his well-proportioned, six-foot one-inch frame admirably. Though he descrved his Wild Bill nickname he never liked it and most of his friends called him Jim, and these numbered many high ranking army officers from General Sheridan and Custer on down.

In 1857 Hickok had taken up a homestead in Monticello Township, Johnson County, Kansas, and was elected constable there the next year. His letters home proved he had an earnest desire to make good as a farmer. For excitement he drove stage part-time, and bossed wagon freight outfits down the Santa Fe Trail.

Wild Bill always did his shooting on the side of right and justice. As an active Abolitionist when the Civil War broke out, he was soon in the Union lines as a volunteer for scouting, sharpshooting, patrol duty, spying missions inside the Confederate lines and guarding valuable supply trains.

He served under General John C. Fremont and General Samuel R. Curtis. The latter put him on his personal staff after the Battle of Pea Ridge on March 6-8, 1862, where Hickok was credited with killing 35 Confederates, including the rebel General McCulloch, as a sharpshooter.

He shot his way out of so many tight spots when chased by Confederate patrols that he and his fast mare, Black Nell, were widely known along the Union lines in the western campaigns. Had he been an enlisted man he would certainly came out of the war with a chest full of medals. But as it turned out, he was given the dubious reward of becoming a deputy marshall at Ft. Riley, Kansas, to combat stealing of cavalry horses and desertion by troops.

In 1867, General Sheridan picked him as a dispatch rider in his campaign to break up the hostile Indian forces which were raiding



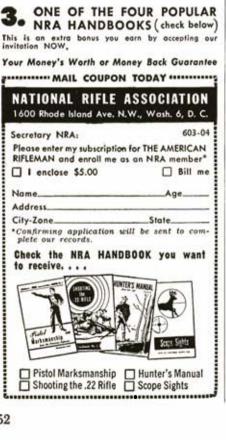


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all over the southwestern plains. Mainly he was to carry messages from Sheridan's headquarters to General Custer's forces in the field, and those of General E. A. Carr and General Penrose, scattered from Colorado to the Red River in Texas. It took both bravery and expert plainsmanship to elude the roaming war parties-and sometimes he didn't.

On one trip he killed all six of a band of Arapahoes who attacked him. At another place, seven Cheyennes made the mistake of jumping Wild Bill seated by his campfire. With his guns blazing, he downed four, but the others kept coming. He blasted one more, and then one hurled a lance which struck his hip. Despite the pain, Bill killed this one. and the lone survivor then took to his heels, but Hickok finished him, too, for good measure.

Buffalo Bill Cody was at Ft. Lyons, Colorado, when Hickok came in for medical attention and there Wild Bill gave him the lance point that had wounded him. Cody always prized this memento of his old companion of the war trails and was fond of showing it and telling its story.

This was Wild Bill at the peak of his career of whom the immortal General George A. Custer wrote: "Whether on foot or on horseback, he was one of the most perfect types of physical manhood I ever saw -a plainsman in every sense of the word."

In the 1870's the great cattle trails came to meet the Kansas Pacific Railroad, then building across the buffalo plains of southern Kansas. The hell-roaring cowboy capitols of Dodge City, Abilene, and Hays City mushroomed as shipping centers. Someone coined a truly descriptive phrase of that day which

went: "No law west of Abilene-no God west of Hays City.

But Wild Bill, as marshal, brought law to both Abilene and Hays City-so much law that the Kansas Pacific Railroad presented the famous scout with a pair of fine revolvers in appreciation of his success, "in upholding the law west of the Missouri."

This was in 1869, and these were the second pair of guns which were presented to Wild Bill that year. That spring he had been picked by Senator Henry Wilson to guide him on a buffalo hunt with a party of friends. Afterward, the man who was one day to be Vice President of the United States gave a dinner as a farewell gesture and there presented Hickok with a fine pair of ivoryhandled, engraved Colt revolvers.

Very possibly these were the two pair of presentation guns Hickok showed to Robert A. Kane when he met him in Milwaukee.

After Wild Bill was assassinated by the hired gunman, Jack McCall, with a bullet in the back of the head at Deadwood in Dakota Territory on Aug. 2, 1876, his guns have been objects of incessant search by collectors ever since.

Colorado Charley Utter, Wild Bill's last pardner who arranged his funeral, and at whose camp Hickok's body lay in state, certainly had access to his guns. Letters from Hickok's sister, Mrs. Lydia M. Barnes, to Col. Harry S. Young, author of "Hard Knocks," revealed that Colorado Charley had once written Wild Bill's older brother that he had the two guns given Hickok by the railroad officials. He promised to send them but never did.

What was almost certainly a Hickok gun



was traced by Raymond W. Thorp, western historian and firearms collector, some 25 years ago. It then belonged to Ivan M. Jenkins of Wyoming. A letter from Jenkins was published in Raymond Thorpe's gun department in "Sports & Hobbies" and traced the history of this gun directly. It had belonged to his wife's grandfather, William Burroughs, who had failed to find gold in the Black Hills in 1876 and was headed for his homestead in Nebraska when he entered Deadwood Guleh a few days after Wild Bill had been killed. Hickok's two guns were being raffled off at 25 cents a chance and William Burroughs was lucky enough to win one.

He returned on foot to Nebraska and this gun was his only protection from Indians or bandits. The gun and its story became a cherished part of the Jenkins family history. It was described as "a .44 caliber Colt's capand-ball revolver, No. 204,672. There is some engraving on the gun, but now is very dim, and has genuine ivory handles, and is in the original holster."

It is pointed out that their ancestor, Burroughs, was very low in funds when he passed through Deadwood and could not have bought a gun outright, and it was always considered an act of Providence which supplied him with a good weapon when he needed one so desperately.

The present whereabouts of this gun is not known, but by co-incidence, another well authenticated Wild Bill weapon is also now owned by a collector, by the name of Jenkins—this rare item belongs to R. C. Jenkins of Indiana. It is a Colt 45, No. 139,345, and engraved "Wild Bill" on the handle. Mrs. Jenkins acquired it from Fred E. Sutton of Kansas City, an ex- U. S. Deputy Marshal in old Indian Territory. He had owned it since 1902 when it was given to him by his friend the famous southwestern manhunter, Pat Garrett.

I have seen a copy of the letter written by Pat Garrett to Fred Sutton at the time he gave him this gun, and it states Garrett had received it from Wild Bill's sister, Mrs. Lydia M. Barnes of Oberlin, Kansas, a short time after Wild Bill was killed. It was the gun he wore when he was assassinated. Garrett also mentions this was the gun he used when he shot Billy The Kid at the Pete Maxwell Ranch in 1882.

One line in the letter is very significant, "I am sending you the 'Wild Bill' six gun you have wanted so long," Pat Garrett writes, which proves there was something very special about this particular weapon. In order to be sure of its safe arrival, their mutual friend and well known law officer, Billy Tilghman, personally brought the gun to Fred Sutton.

Another which is claimed to be a Wild Bill gun is in the Union Pacific Museum at Omaha. This is a Smith & Wesson of about .44 caliber, serial No. 8441.

These and a few other mementos of the Old West's top triggerman are all that remain of the Wild Bill saga. When the peerless Wild Bill, descendent of long riflemen of the American Revolution, gasped his last on the floor of a frontier saloon on Wednesday, Aug. 2, 1876, in Deadwood, the cry "Wild Bill is dead!" spread like a prairie fire up and down the gulch. But they were only partly right— Wild Bill will never die; his deeds have won him immortality.

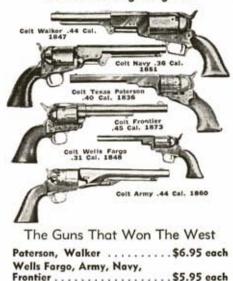


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FDR AS A SHOOTER

(Continued from page 23)

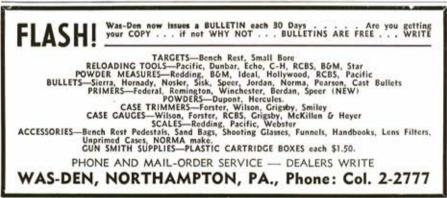
took a long look at the service Springfield, with its supposedly fine accuracy and the rear sight placed so far off from the shooting eye you could hardly see it. Peep sights close to the eye were known among civilian shooters as being superior to the open sights, especially the usual military barrel sight. Roosevelt had Springfield Armory fit up a special Model 1903 rifle for him to test. The rear sight fixed base was omitted and the handguard extended to the edge of the receiver. On the rear bridge of the receiver, placed near to the eye where aiming would be natural and quick, was a primitive Lyman-type windage and elevation rear sight. The sight slide apparently permitted elevation up to a thousand yards range or more, and the stock at the right near the bolt handle was recessed for the base.

This unusual rifle was demonstrated during the summer of 1917 by Roosevelt on the Anacostia firing range near Washington. A general display of weapons was presented. Examples of the regular Benet-Mercie Light Machine Rifle were fired, a Hotchkiss-type gas operated light machine gun made by Colt, as was one of the Colt "potato digger" Browning machine guns on wheeled landing carriage. Roosevelt had a real schutzenfest, but the modified Springfield sight did not offer advantages great enough to warrant the change during the emergency.

Some 25 years later during World War II the Springfield was modified as the 1917 prototype foretold. The issue M1903A3 rifle has the adjustable sight on the rear of the receiver.

The war, and working in Europe on naval affairs in 1919, gave Roosevelt no time for play. Finally after the election of Warren G. Harding, incidental to the defeat of America's interest in the League of Nations, the former Assistant Secretary took time off. He went on a fall hunting trip to Louisiana in October of 1920. Then came the sailing trip to the family resort of Campobello near Eastport, Maine, and the attack of polio in 1921. He had no chance to fire the .275 Rigby-Mauser he picked up in London after the war. It still rests in its fitted leather case with cleaning equipment and a detachable scope, stored at Hyde Park.

Through the years Roosevelt gathered a small selection of firearms. As President, he received some from foreign politicians. A small Browning .25 automatic was the gift of the Belgian manufacturer. It is floral



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engraved, with ivory grips, and bears the legend "Hommage de la F.N. au President F. D. Roosevelt." It was given to FDR by M. Joassart on April 20, 1944, in behalf of the board of directors of the Fabrique Nationale at Liege.

An unusual pair of silver mounted Moorish "snaphaunce" muskets about 125-150 years old were received during the war. A silver plate on the barrel of each is inscribed in Arabic and in English: "To the Most Exalted Franklin D. Roosevelt, President of the U.S.A. From His Friend and Admirer Hadj Thami El Glaoui, Pasha." The Hadj was the ruler of Marrakech, French Morocco, and the muskets were once the property of his grandfather.

Matching the muskets is a pair of Albanian "miguelet" pistols. These are covered in repousse silver, and were presented to the President by the Hon. Hugh Grant, U. S. Minister to Albania in 1936. In design they reflect the cultural background of the Arab world which until after World War I spanned north Africa to the Near East and into Greece.

"My dear Grant," wrote the President, "It was delightful to see you yesterday and I want to tell you also how thrilled I am by those two most interesting and very beautiful Albanian pistols. They are going into a glass case in which I keep my treasures. I am tempted to try one of them to see if I could hit the target with it. Ever so many thanks. As ever yours, Franklin D. Roosevelt."

The inevitable Colts in any collection are represented by one of the most magnificent pairs of percussion revolvers ever put out from the Hartford works. They are a pair of engraved New Model Pocket Pistols in .36 caliber. The handles are of cast sterling silver, made by Tiffany of New York. The flush-lined case also contains a silver-plated powder flask, engraved bullet mould, and nipple wrench and separate screwdriver. The cleaning rod is missing.

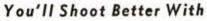
These fine guns were commissioned by Abraham Lincoln and presented to Kibrisili Pasha, governor of Adrianople in 1864. FDR received them back from an Italian nobleman, the Baron Solari of Rome, in March of 1945, the month before his death.

Other American arms are represented. There is a Springfield .58 rifle-musket dated 1862, which was presented to the President after he had established the library at Hyde Park. Its donor in 1942 was James P. Boyce of Poughkeepsie, N. Y. A W. W. Marston single shot pistol is another unusual library relic. Donated by Robert Held of New York, is was allegedly sold to Commodore M. C. Perry and carried by him on his trip to Japan. Since Commodore Perry called on the Shogun of Japan on July 14, 1853, and the pistol bears the patent date of 1854, the story seems hardly credible.

A scarce American revolver in the library is the Fitch & Waldo .31 pocket pistol which many collectors believe was made by the Bacom Arms Co. of Norwich, Conn. More modern but just as scarce is the single shot "commando" pistol which was designed during World War II and made by General Motors in Detroit of welded and stamped sheet metal. In .45 A.C.P. caliber, it is an unusual memento of the savagery of war. Automatics are represented by an Italian









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Beretta, a pocket .25 Ortgies and a Walther P-38, given to Roosevelt by Allied officers as he toured the war theaters or attended important conferences such as the one at Yalta in 1943. Prototype to these later guns is a primitive Shulhof repeating pistol, a finger-operated repeating pistol. This was given to Roosevelt in January, 1945, by Jonah Lindley of Sacramento, California.

"In the year 1900, when the transport 'Grant' took the Sixth Cavalry to Tientsin, China," wrote Lindley, "I got a pistol from the arsenal which I am sending to you for your museum. At the time I got it, General Shabby wanted it for Washington. Take off the plate on the left side and see the way it works. The shells are conveyed up the stock. I do not have any shells, for I shot them away at sea."

When Lindley found the Schulhof pistol in the Tientsin arsenal, the idea of a cartridge magazine in the butt of a pistol was new to arms design. The Schulhof was a forerunner of the automatic pistol. Whether Roosevelt understood the importance of the pistol is an open question. The letter of appreciation was formal, polite but noncommittal, written by Grace Tully, his private secretary. The note had none of the informal feeling of his earlier reply to Hugh Grant.

There are two more guns at Hyde Park: an old musket used by the G.A.R. and given to Mrs. Franklin D. Roosevelt in 1942 for preservation by the four surviving members of McPherson Post No. 4, G.A.R., Kansas City, Mo. Lastly, is an undistinguished Forehand & Wadsworth single barrel break open shotgun, 12 gauge, once owned by Warren H. Delano of Roosevelt's mother's family. It was given to the President by Mrs. Elza Twigg of Alegany, Maryland.

The battery of fine shotguns he used ducking, and the little bird-collecting gun of his boyhood years, are nowhere to be found. The special Springfield riffe is unknown now by the experts at Springfield Armory. There is no record. But the small gun collection at the Roosevelt Library in Hyde Park, established by the President in 1939 as a repository of "source materials for the study of our era," gives a brief glimpse at the unrecorded sportsman-hunter side of a versatile man of our time. Were it not for polio, there might have been more to tell.



SHOTGUN PATTERN

(Continued from page 34)

anticipated. For the shot charge expands into a cone-shaped flight and the further it travels, the larger the area it covers. True, the fliers may be so deformed that they'll not continue as part of the pattern-making string of shot; but then fliers are seldom dependable as killing pellets in any case. Their friction-flattened sides cause them to catch air pressure unevenly, sometimes sending them sailing off in wide curves so they miss the point of aim by 10 yards or more by the time they've traveled 40 vards.

Figure II: If the distribution of pellets in the 10-yard group is thin at the edges, while the center is completely blown out because of pellet density, the 40-yard pattern will still be dense in the center and thin along the edges. That type of pattern may prove highly effective beyond 40 yards on game. But it takes an expert marksman to put that pattern's dense center on the target at under 40 yards. The indifferent shot may be killing his game with the fringe of the pattern, or shooting up his game quite hadly when he occasionally gets the dense center on game that is under 40 yards away.

Figure III. If the 10-yard distribution of pellets runs from a very dense, but not shot out, center to a lighter distribution along the edges, the 40-yard pattern will show good distribution. However, its center will be slightly more dense than the edges of the 30-inch circle will show. This type of pattern is well above the average in quality.

Figure IV: This is the "dream" pattern that results in clean kills on game, no matter which portion of the shot charge hits the birds. Its 10-yard characteristics consist of a dense center, tapering toward the edges of the group, but showing very few fliers. At 40 yards such a pattern covers the entire traditional 30-inch circle with equally efficient killing effect. A shotgun owning such a pattern is a prize beyond price.

Occasionally an odd pattern crops up that is a 1-in-500 freak. One of these is the socalled "doughnut" pattern that occurs even in a very fine patterning shotgun. This is usually the result of using shells loaded with the old-time non-frangible wads held in place by the long roll crimp. As its name implies, the center of the pattern is nude of shot, or very nearly so, but the edges of the patterning circle are quite densely shot-perforated. This odd phenomenon is caused by the shotwad hitting the air just right to create maximum air resistance. The bulk of the shot charge then has to flow around this obstruction, causing the doughnut-like pattern.

Another, generally caused in the same manner, is the lopsided pattern, where the shot charge seems to be definitely diverted to one side, or high or low. In such cases the shot wad hasn't met maximum air resistance, but still has deflected the bulk of the shot charge to its out-of-line impact on the target.

Any shotgunner getting one of these freak patterns had best ignore it and fire at least one more pattern for more accurate checking. In fact it's a good idea to always fire two shots per pattern, using one as a check against the other. In some cases it's a good idea to formulate an average of the two for the closest check of the shotgun's performance. But it is rarely necessary to fire three





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targets at the 10-yard range, except in those very rare cases when an obviously freak pattern shows up.

Few shotgunners thoroughly understand just how a pattern is formed. Fewer yet know just how shotgun choke works. That is probably why the old-fashioned method of firing many shots at target paper at a 40 yards range persisted for so many years. Actually, like so many fine advances in the firearms world, the Richards method was so simple that it sat, unnoticed, under the noses of thousands of shotgun users.

The choke of a shotgun is a very exacting piece of firearms engineering. It does not extend throughout the length of the barrel. Actually it is a very scant part of the barrel length and occupies only a very few inches of the muzzle end of the barrel.

The length of the choke taper varies according to the degree of choke. Ithaca Gun Company, for instance, has zero choke at the muzzles of its cylinder-bored barrels, a choke that is a mere 5%-inch in length in improvedcylinder, 1¼ inches for modified boring, 1% inches in improved-modified, and 21/2 inches in the full-choke bored barrels. This length of choke holds for the above Ithaca borings regardless of whether the barrels are for insignificant .410s or for 10 gauge magnums.

It is this length, plus the degree of construction, that produces the variation in density of pattern. For instance, the interior diameter of a .410 cylinder-bored barrel is a full .410-inch. But it is reduced .005-inch with each degree of choke; the improved cylinder measures .405, modified .400, improved modified .395, and full-choke boring is .390 at the muzzle. As a comparison, because of its far greater original diameter, the standard 12 gauge boring is reduced .009inch for each degree of choke. The 12-gauge cylinder bore measures .729 in inside diameter, the improved-cylinder .720, the modified .711, the improved-modified .702, and the full-choke boring is .693, tapering uniformly throughout its length.

These figures automatically answer the frequent question: "If I cut off an inch of the muzzle end of my damaged shotgun barrel, will this affect the choke?" Of course it will! Excepting only if the shotgun is originally a cylinder-bored weapon, when it will remain so. But in all other chokes such amputation, no matter how skillfully done, results in a more open choke. This, in turn, creates a wider dispersion of the shot charge, automatically decreasing the density of shot pattern and the gun's killing range.

The only solution to such a dilemma is to have all the remaining choke reamed out of the damaged barrel and have it fitted with a choke device. If it is to be used for only one type of hunting, a single tube of the preferred choke can be installed. But if a variety of hunting at sundry ranges is to be done with it, the best bet is to have one of the variable-choke devices installed on the amputated barrel. Personally, if I suffered such a mishap to a shotgun barrel, I'd prefer a variable-choke device-like the Shooting Master "Champion" or "Cobra" outfits, made and installed by Master Chokes, Inc., of Gardner, Massachusetts, or Poly-choke. Then, with a flick of the fingers, I can select the type of choke most suitable for the game of the hour; yet change that choke if the game shows out-of-normal behavior.

Finally, such a variable-choke device offers the shotgunner a complete range of chokesfrom full cylinder to full choke-so he can set his choke to take quail at 20 yards up to turkeys and geese at 50 yards and yet kill his game without mangling it at the short range or merely lightly crippling it at the long yardage. He then has the closest approach to an all-around shotgun that it is possible to have in one weapon. ۲

HOW TO KILL SQUIRRELS

(Continued from page 25)

a squirrel's body. The bullet whined lonesomely after it passed through the bark of the limb. But it was not a wasted shot. I missed the squirrel all right, but I done so purposely. Fact is, I missed him. But I also killed him, and stone dead at that.

When my bullet struck the limb, the squirrel topped off. The impact of the bullet stopped the squirrel's heart beat instantly, and he didn't even kick after hitting the ground. I did not retrieve my kill until later, but I knew what to expect-a squirrel for Rat with no bullet holes in its skin.

Back in the old days this was called "barking squirrels." The bullets used in the old flintlock and cap and ball rifles were a lot larger than .22 bullets, but they were powered by powder a lot weaker than the powder that sends modern .22 bullets on their way. "Big Lee" has been hunting squirrels since the cap and ball era, and here is what he told me on the way home from the hunt I took with him:

"One can't bark them to do any good with .22's unless they use long rifle cartridges with solid lead bullets. Mushroomy bullets spatter out too much the instant they strike the tree bark, and them coppery looking bullets just don't seem to pack as much jar as lead bullets. The bullet has to be skimmed through the very outer edge of the bark under the squirrel's heart. Under the head will addle them and maybe even knock them off the limb they are on, but it won't kill them."

Although he is 70-odd years old, "Big Lee" refuses to use anything but a plain open-sighted .22 for his squirrel hunting. He shoots without any rest, too, and how he barks squirrels with such a set-up is beyond me. I was not at all sure I could do it with a scope-sighted .22 shooting with a rest, but after my first kill I started gaining confidence in myself fast. Probably too fast.

After a ten minute or so wait following my shot, the gray squirrels started moving again. I saw one pause on the body of a tree about 40 yards from me and decided to try another barking shot. I thought I had the cross-hairs centered perfectly under the graytail's heart in the edge of the tree's bark, but I was evidently off just a hair. I killed the squirrel all right, but as soon as the bullet struck I knew that I had hit the squirrel instead of the bark of the tree. The sound was a distinct "plop" instead of a dull sounding "thud" like a .22 bullet makes when it strikes wood or tree bark, and no bullet whine followed. Rat will

never see that squirrel," I thought to myself. "That'll be one for my own stew pot."

There was another ten or fifteen minute wait before the graytails started stirring again. There was very little breeze blowing, and about the only sounds I heard during the wait were the fussing of a flock of feeding bluejays, and the distant "caw'ing" of a flock of crows that were probably tormenting an owl. Nothing moved in the woods except the bluejays and some smaller birds, but I knew that there were gray squirrels all around me.

Even the sound of a .22 shot, however, will stop the movements of all squirrels in the immediate vicinity of the shot for ten to 20 minutes. Shotgun blasts will put a longer lasting scare into them, usually covering 30 minutes or more, and one might as well move their stand after two or three shotgun shots from the same spot. However, where a .22 rifle is used, one can continue to shoot from the same stand throughout an entire morning if you remain perfectly still between shots, and retrieve no dead squirrels until you are ready to leave the stand.

Gray squirrels are smart little animals, and their seeing capacity is equal to that of blue darter hawks. I was wearing khaki colored clothing that blended fairly well with the ground leaves and log I was sitting on, and within a few minutes after shots the squirrels would stop watching me sitting motionless on the log and start moving again. If I had been wearing any white or loud colored garments, chances are they would have headed for their dens in a hurry once they started moving after shots.

Well out in the woods two graytails suddenly cut loose scolding each other like two old maids quarreling across a back alley fence. And this seemed to act as an allclear signal for the other graytails in the area to start moving again.

I saw one inching its way slowly out the limb of a maple some 30 yards from me. He was evidently still somewhat suspicious, and a very slight movement of my rifle froze him on the limb where he was. I had another dandy chance for a barking shot, but danged if I didn't muff this chance also. I must have centered the cross-hairs a wee bit low because when the rifle cracked, the graytail seemed to jump straight up for about a foot, fall to the ground, and then take off running on the ground like a scared jackrabbit.

There was no bullet whine after the shot, and I knew in my mind that my bullet had smacked solidly into the limb too low to go on through it, and also too low to create enough impact shock to kill the graytail. Talk about pin-point accuracy; it certainly takes just that to bark squirrels with a .22 Anyway, I already had one consolation. I was confident that one of my dead squirrels on the ground had been barked to perfection, and there was still a good chance that I would get more the same way.

Twenty minutes or more passed before the graytails started moving again. Fact is, I was beginning to get a bit fidgety and was considering moving to another location, when I saw some leaves shaking in the top of a hickory tree about 40 yards out from me.

Then I saw the little dickens on a limb, and when I moved my rifle just a wee bit he flattened out on the limb perfectly for a barking shot. I took more pains with my aiming this time. Very slowly and cautiously I centered the cross-hairs on just the right spot (the very top edge of the limb directly under the graytail's heart), and very gently I squeezed off the shot. A lonesome bullet whine followed the sound of my shot as the graytail toppled off the limb, and I was fully confident that I had barked another squirrel for friend Rat's feast. There was not even a dead leaf rustle after the squirrel hit the ground. I had put the quietus on him good and proper.

There are probably those that will argue that squirrels cannot be barked with .22 rifles, but I know better. I have seen it done by others, and I have done it myself. I'll admit that it takes extremely accurate shooting, and the right kind of cartridges carrying the right kind of bullets, but the fact remains that it can be done. I have heard really expert riflemen argue that it definitely takes a larger caliber rifle than the .22 to do it, and there was a time when I very staunchly argued the same thing myself. After my convincing trip with "Big Lee," however, I changed my mind. For me it adds a brand new set of thrills to the sport of squirrel hunting. It is something entirely different from the usual squirrel hunt.

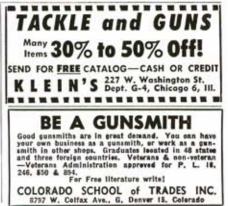
I set my morning's goal at three for Rat, and I wanted a couple for myself.

What a thrill it was to learn definitely that all of my squirrels except one had been perfectly barked. That's right, barked. There was not even a hair scorched on any of them, let alone any bullet holes in their hides.

In less than an hour after my first barking squirrel hunt ended, I ambled into Rat's pool parlor in town and handed him a paper bag containing three gray squirrels. "My friend," I said, as I handed him the bag, "no longer shall you thirst for some squirrel and dumplings, and just as I promised, not a bullet mark will you find on any of these graytails." He took the squirrels out of the bag and examined them very carefully and critically. Then he looked at me.

"Thanks a lot," he finally stammered, "but I'll be danged if I believe you killed them with your .22 rifle."

them with your .22 rifle." "I barked them," I retorted, as I started walking out of his place of business, and what I said was fact. He was mumbling something about "me being a cracked nut" as I walked out the front door of his place.



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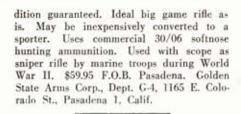


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WITH Guns



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The Husqvarna "Lightweight" is a precision combination of lightness and heavy caliber performance in calibers .270, .308, .30-06 and 7x57mm. The new gun incorporates the same Improved HVA Mauser Action as used in Husqvarna's Crown model.

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Available with adjustable open rear sporting sight, hooded ramp front sight with silver-plated bead. Receivers are drilled and tapped for most receiver sights and scope mounts. Stocks are of choice European Walnut of 'Sporting" type design with builtin cheek rest, hand checkered pistol grip and foregrip. The "Lightweight" retails for \$139.95.

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THE GUN MARKET

Classified ads 15c per word per insertion including name and address. Payable in advance. Minimum ad 10 words. Closing date for the June, 1956 issue (on sale May 1) is March 16. Print your ad carefully and mail it to: GUNS Magazine, 8150 North Central Park Blvd., Skokie, Illinois.

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