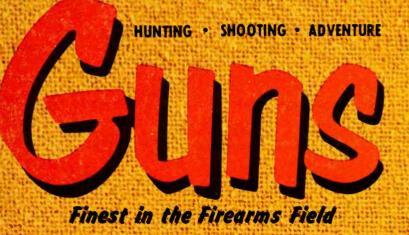
DECEMBER 1968 75c



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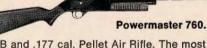
The complete system con-CO₂ Powerlets, 25 reusable targets, and the new skeet trap. The entire

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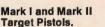
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TRIGGER TALK

ANNOUNCING! Mr. Stephen Corn Ft. Lauderdale, Florida

Winner of the Weatherby Rifle contest in our September issue; congratulations! These free gun drawings mean a lot of extra work for our staff, but it all passes unnoticed when we get a letter from a happy winner. You could be next. On page 44 we are offering you a chance to win a handsome Schultz & Larsen rifle and a Redfield Scope—the kind of hunting outfit dreams are made of.

Speaking of free guns, readers of our 1969 GUNS ANNUAL have a chance to win not one, but four guns. If you don't have a copy of GUNS ANNUAL, take a look on page 74 and see what a buck and a half will buy.

This being the last issue of the year, I would like to take up a few inches of space for personal reasons. During this past year, GUNS Magazine has grown in readership; matured in concept; and attained a stature unequalled in its history. And the praise for this achievement goes to a great many people. It should go to the writers, both staff and free lance, who contributed their knowledge; to the many photographer-shooters who recognized our quality color reproductions as a prestige vehicle for their talents; to the encouragement the staff received from the untold number of readers who took the time to say a few kind words about the magazine: and to the silent readers, too, who buy GUNS at their newsstand or through their yearly subscriptions. Our efforts are but reflections of the support of our many thousands of readers, and to each and every one, our sincere thanks.

THE COVER

This brass frame .44 rimfire Henry rifle, serial #11184, was engraved by L. D. Nimschke. The mate to this gun is shown in the Nimschke book. For those who would like to frame this cover, we have reproduced it on page 37 without the type. Cover photo by Dr. R. L. Moore of Philadelphia, Miss., who owns this unique collector's item.

DECEMBER, 1968 Vol. XIV. No. 8-12 George E. von Rosen Publisher



CONTENTS

FEATURES

color feature . . .

THE HENRY RIFLEJohn Craig Andrews	36
GALLERY OF FAVORITE COVERSSuitable for framing	38

special . . .

POLICE SNIPER PROBLEMSCol. Rex Applegate	28
THE HD MAGNUM SHOTSHELLWallace Labisky	30
IRON CURTAIN FIREARMS IN CANADAJoe Chute & Bill Van Rocy	34

shooting . . .

ARE YOU HANDLOADING FOR VELOCITY?	21
POINTING THE SHOTGUN	22
THE 6MM'SLes Bowman	32
SHOOTING THE .43 ROLLING BLOCKRichard P. Miller	46

technical . . .

THE INSIDE STORY: REVOLVER TIMING	18
THOSE GRIM CALLING CARDSLt. Col. E. F. Donnelly	24

DEPARTMENTS

Crossfire		Gun Rack	
Questions & Answers		Shopping with Guns	
Handloading Bench	George Nonte 12	New Patents	
Our Man In Washington	Carl Wolff 14	Arms Library	
Point BlankCol. (Charles Askins 16	Index of Advertisers	
Pull!	Dick Miller 48	The Gun Market	
Jerome Rakusan		Les Bowman	Hunting
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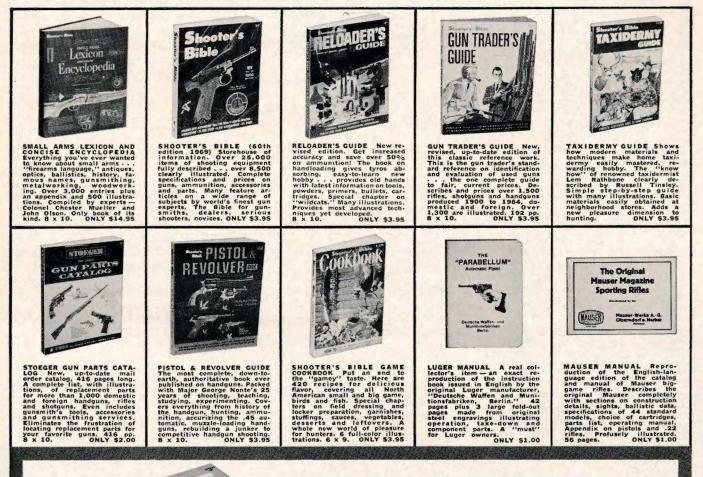


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CROSSFIRE

I'll Take the M-16

It is my feeling, as well as many others' currently serving in Viet Nam, that all comparisons made between the Communist AK-47 and the M-16 rifle are unfair and unrealistic. Tests made by Army Ordnance 'way back in 1966 have been made obsolete and should be disregarded now. Then, the main trouble with the M-16 was in the ammunition and the buffer, but since then, these shortcomings have both been eliminated by modifications, and it is my belief that today's M-16 rifle is the finest ever made by any nation now that the bugs have been worked out.

I have been in Viet Nam for just over 11 months, and have been in lots of close calls, but my trusty ol' 16 came through for me every time. I do not claim to be an expert on weapons of any kind, as you must be in order to turn out a magazine as fine as yours, but as a combat veteran, having seen my share of contact, I feel I know what I'm talking about.

One more thing I would like to mention: the enemy are scared stiff of the "black stick of death" as they choose to call the M-16 because of the way its bullet strikes. I have seen V.C. killed with M-16's who, with an M-14 or AK-47, would've had a slight shoulder wound. I've said enough, thank you for your time.

SP/4 Rick W. Fairfield Viet Nam

On The Trail of the C&D Gun

While I was stationed in Manila at the Grace Park air strip there was a crate of a couple hundred of the "Cloak and Dagger" throwaway guns left in a hangar by some outfit that had preceded us. I brought five of them back with me. I have since given away one to a local doctor, but still have four of these elegant collectors' items in their original cartons. I see in the May and June issues two other veterans have some of these little powerhouses. With my four, now all that's needed is the other 999,984 of the million made.

> Mickey Allhiser Shewano, Wisconsin

My Friend the Sweet 16

As a sergeant in the 173rd Airborne Brigade, I've seen an awful lot of M-16's, from up on Hill 875 to long sweeps piggyback on tanks. I think it is an outstanding weapon in every sense, but, what is often left unsaid and I'll bet few of your readers realize is that there was an M16E1 submodel of the basic Armalite gun which was the one there were problems with. It is now obsolete and has been replaced by the M16A1 ever since November of 1967. The M16A1 has the new buffer assembly, block bolt and carriage, a new, bigger chamber and its insides are now chromed, plus a new style flash suppressor. Not being in ordnance inspection, I'm not sure just how many gigs they can find in it when they set their minds to it, but I do know that after riding on the back of a tank, a person is going to have one awfully dirty weapon, and we have to test fire when dismounted again. A grunt can burn up 400 rounds without one single malfunction, and I think this speaks of a really outstanding rifle. The older M16E1 needed a lot more babying than the newest, but my E1 never did me wrong either. The AK-47 has its faults: the selector switch isn't handy enough, full auto makes the barrel point in the sky and louses up accuracy. But I sure do wish old Uncle Sam would start making more 30 round magazines for the M-16. That is a very big HINT.

Sgt. Phillip J. Boyle APO San Francisco

OF STOCK

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ND BBI

Gun Owners' Duty

I am very disturbed about the increasing anti-firearm trend in our legislatures. I am equally disturbed about the alarming number of apathetic gun owners who are relatively inactive in combatting such legislation. They may write just one letter and then feel that they have done their part, or say that they cannot find the time. Isn't it strange how they have plenty of time every weekend to enjoy their firearms, but never enough time to defend the right to own them? If every gun owner spent half the time he spent enjoying his firearms in combatting anti-gun legislation and sentiment, by writing polite and sensible letters to his congressmen and newspapers, the threats to private ownership of firearms would be minimized.

The people campaigning for severe gun control are being heard. It's about time that more gun owners made themselves heard. The louder outcry will make the final decision. Which voice is it going to be? Many of our forefathers paid for this valuable right with their lives; the least we can do is pay a little of our time to preserve that right.

James H. Patton Concord, Tennessee

Popular With G.I.'s

Enclosed is my entry coupon for your gun of the month contest.

I would like to take this opportunity to tell you how much your magazine is enjoyed by servicemen here in Turkey. We especially enjoy articles on handguns and modern automatic weapons. The gun situation here is not good because of strict Turkish firearms regulations. Your magazine is the next best thing to being back in the U. S. where an honest citizen can still buy and use a gun.

The new legislation being proposed in Congress appears to me to do more harm than good. The criminal will not be altered in his quest for arms because he intends to break other laws anyway. Provisions of proposed bills call for federal licensing of all small arms ammunition manufacturers and there is no provision to exclude the handloader from this license. How many criminals take time to police up their brass so it can be reloaded at a later date? This is only one of many provisions that appear to me to be unfair harrassment of sportsmen. Let's aim legislation at people who misuse firearms by providing mandatory prison sentences for persons using firearms in crime.

I urge all responsible gun owners to

write their congressmen giving their views on firearms legislation. The second amendment to our Constitution provides the right to own and bear arms. It is up to the sportsmen of our great country to see that this basic right is maintained.

Sp/5 William R. Jarvis, Jr. APO N. Y.

Guns Magazine

I think the cover on your July 1968 magazine (of the Sharps) is worth the 75ϕ price of the magazine.

But now let me ask who the heck does George C. Nonte think reads his articles? "The Mysterious AK-47" I truly think any article Mr. Nonte writes is a mystery.

Pp. 58 ex-Capt. (MC) Tom Bryan states that in 1000 wounds he could not tell the difference between a .223, .30 carbine, .30-06 or M-43 bullet. This is without a doubt one of the dumbest statements I have ever read!

I think this proves that the man who made this statement and the man who allowed it to be printed could both write all they really know about ballistics in bold print on a matchbook cover.

Sportsmen, like myself and my family, enjoy magazines such as yours, but here is one part where we think magazines are going to hurt us. Keep the *junk* and *trash* out! What real sportsman gives a damn about your SPITFIRE CARBINE .45 ACP p.57. I don't think any sportsmen are interested in this type firearm, although I'm certain Senator Dodd will be.

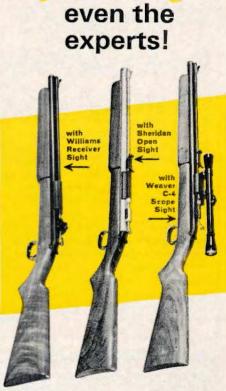
If you are going to publish a sportsman type magazine, then let's keep it a clean magazine that they can not use against us.

I know another magazine that will print this if you don't.

Dennis McConnell "Sportsman for many years"

In reply to the above, and to the many other letters we have had about the same subject, let us state one fact right now: We are not publishing a "sportsman type" magazine; nor are we publishing a magazine only for Mr. McConnell and his likes. While he, and possibly some others, may have had little interest in the article on the AK-47, there have been many who wrote in praising it.

As far as GUNS being a "clean" magazine, we'll place it along side any of the other gun mags or the "clean outdoors" publications. If we show a photo of an auto pistol, anything "unclean" about it is in the mind of the critic.—Editor



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Rolling Block Super Conversion

I want to make a Rolling Block conversion in the .348 Winchester. I know that this cartridge is on the verge of obsolescence, but cannot fully understand why. Is its poor reputation the fault of its silvertip bullets not expanding properly, or of the Winchester Model 61 or 62 which introduced it?

> Milton B. Williams Hot Springs, Arkansas

You will see various opinions on calibers rolling block actions can be converted to successfully. Personally, I would never invest the cost of a new barrel in one. They were built for 44-45,000 psi's, which would make it marginal with the .348. Tests have indicated that these actions usually hold pressures beyond the listing, but no assurance of safety can be given. Working tolerances alone, over the combine of two blocks and pins, amount to excessive headspace under pressure; support is not inline and cases stretch and the heads actually bend. The Winchester .358 is a rimless cartridge, adapted to the newer lever action, which was an effort to retain a .348 type heavy bullet cartridge without additional production problems. The Winchester models 61 and 62 never had anything to do with the .348, both being .22's! The .348 Winchester came in with the Model 71, a well-built arm that was not popular enough to pay the rent on its production line and was discontinued for that reason. For its class, the .348 expanded well enough (even in the Model 71), though not as well as some others. I do not know that this shortcoming was the "fault" of either the round or the rifle. I agree that it is a pity that sales volume is the big criterion that kills off a moderate seller and substitutes a similar, though perhaps inferior, arm.-W.S.

Reloading Tool Choice

I am an NRA pistol master and want to start making my own reloads for .45 Auto target work. I have in the past used 185 and 200 gr. Hensley & Gibbs bullets with 3.4 and 3.9 Bullseye and cases sized 471-472 lightly crimped with good effect. Due to rising costs, I am considering investing in the Texan 101T, Bonanza, Micro-Precision 650, Pacific De Luxe or other outfits. I have no time for molding my own bullets, so could you reccomend a source?

> Albert Francis Miami, Florida

All the tools you mention are good. but only the Texan 101T is a turret type, which type I think would best suit your needs. With a turret model, you could leave it completely set up for .45 and avoid having partially loaded rounds laying around when you guit for the evening. I would recommend a Lyman Spar-T turret tool complete with shell holder and automatic primer feed, a Lachmiller fixed-charge powder measure preset at the factory for your loading. This will eliminate any requirement for a separate powder scale or adjustable measure. A Lyman 3-die set with tungsten carbide resizer would also do nicely. This outfit will run you around \$75, and with a little practice, you should be able to load at least 200 rounds per hour on it, processing each case through all the steps before removing it from the shell holder. As for bullets, I suggest you obtain a small supply of the new 185 gr. Speer semi-wadcutter. I see no need for anything more sophisticated or expensive than the outfit just described unless you go to a semi-automatic progressive tool.-G.N.

(Continued on page 10)

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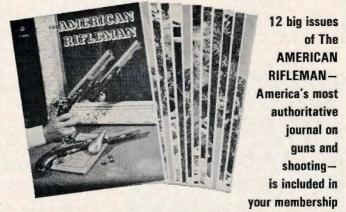
• NRA Legislative Service-keeps you posted on new or proposed gun laws.

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Whitworth Sniper Rifle

The other day in a gunshop I saw a rifle labeled "Civil War Sniper Rifle" that really stumped me. I recall that the snipers were armed with rifles of the Billinghurst type, and this one seemed to be of English pattern, with a hexagonal bore, short, and chunky British design with a stud for a bayonet on the right side. In excellent condition, the asking price was like gold.

I knew I had seen a rifle of similar type somewhere but I have not found it again. It does not match the illustration of the rare and famous Whitworth exactly, but my references tell me that there were several models. However, the Brunswick rifle, which shoots a grooved ball, is almost the same except for its trigger guard and size.

If this rifle is what it purports to be, I may pay the asking price. Is there any way of identifying it from markings or special proof marks?

Jesse Smiley San Bernardino, California

Without seeing the rifle, it is hard to hazard a correct guess as to just what it is. For one thing, a Whitworth rifle was not short. With its range and accuracy, the heavy barrel was noticeably on the lengthy side. Its hexagonal bore used an elongated bullet cast and then swaged to the shape of the bore and Whitworths were more often than not equipped with a fine telescopic sight and mounts. A fine English Whitworth or good copy is well worth the "gold" price. Collectors value a Whitworth from \$250 to \$1000, depending on condition. model, and accessories.-R.M.

Gunstock Finishes

I am looking for a good finish to use on my gunstocks and I have heard of a "Poly-Bond" type that I have not been able to find. How good is it and where can I get some?

> Clarke S. Hall Anchorage, Alaska

For "Polybond" stock finish try Polyform Mfg. Co., Box 305, Escondido, California 92025. There are a number of fine finishes which retail gun and sporting goods stores sell, such as Linspeed, Anderson's Glaspray, and Top Gun. Our shop has used Mayer's New Wonder Stock Finish for a number of years. It is waterproof and very durable, plus being easy to apply. The others above appear to be equally good.—W.S.

Mystery Contract .45 Auto

I have a Model 1911 U.S. Army Colt automatic which has been accurized at a government armory. I do not know the background of collectors .45's and am puzzled over the marking "SS" stamped under the serial numbers and on the top of the slide. The pistol is numbered #424243 and its last patent date is Aug. 19, 1913.

> Charles H. Bergtold Los Gatos, California

Certain Government Model .45's are encountered with special markings supposedly of Winchester, Burroughs Adding Machine Co., Lanston Monotype Machine Co., National Cash Register Co., A. J. Savage Munitions Co., Savage Arms Co., Caron Brothers Mfg. Co., and North American Arms Co. Also encountered are the inspectors' marks. Out of all these, I know of no "SS" mark. It is always possible that they are the initials of a past owner. In good condition, a commercial (with a C in front of the serial number) .45 is worth \$55-65 or \$45-55 if a military marked "United States Property."-S.B.

Police Loads for Jacketed Bullets

I have been reloading for several years for the local policemen and have always used cast bullets. Lately there are all kinds of jacketed pistol bullets on the market. I have always gotten excellent results in the standard police calibers, but would like to try some of the newest loads with the new bullets. What would you suggest?

Larry Horton

China Grove, North Carolina

Generally, lead bullets properly cast of a relatively hard alloy will produce better accuracy in revolvers (provided lubrication and sizing are correct) than the jacketed types. At high velocities jacketed bullets will usually deliver accuracy equal to that of lead bullets but at lower velocities this is not the case. Jacketed softpoints give better expansion, but less penetration. As for police loads, try these:

.38 Special: 160 gr. cast S/WC, 11 gr. 2400, 1050 fps; 160 SP, 11 gr. 2400, 1110 fps

.357 Magnum: 160 gr. cast S/WC, 14 gr. 2400, 1270 fps; 160 SP, 15 gr. 2400, 1350 fps

.41 Magnum: 220 gr. cast S/WC, 20 gr. 2400, 1230 fps; 220 gr. SP, 21 gr. 2400, 1275 fps

.44 Magnum: 250 gr. cast S/WC, 23 gr. 2400, 1350 fps; 240 gr. SP, 23 gr. 2400, 1550 fps.—G.N.

Roth-Stevr M1907 Pistol

I brought a pistol back from Germany as a souvenir and now I am interested in putting it in working order. It is a Steyr model automatic pistol and I am wondering what cartridge it is chambered for. A .32 caliber is too small, but 7.65 and 9 mm's are too big. Other than "WAFFEN-FABRIK STEYR" it is marked with an "HV", eagle, and "31" monogram on the back of the receiver, and has what could be the serial number, "82," or the letter "K" marked on many pieces. On the right grip there is a metal disc inscribed "Tel.B2 12" set in behind the screw. When was this gun made, for what cartridge, and why without a serial number?

J. M. G. Gagne Quebec, Canada

The pistol you describe is the 8 mm Roth-Steyr, Model 1907. The serial number was usually stamped on the upper flat portion of the right hand side of the frame. If the "82" is not the serial number, you may have a "lunchbox special" that was liberated, piece by piece, by an employee of the arsenal. The cartridge for which these guns were originally chambered is the 8 mm Roth-Steyr, which was made by many European factories until about 1945. It is still offered by G. Fiocchi of Lecco, Italy. Production lasted only until 1912, but the gun was so well made that it was used in various quarters through WWII and may still be encountered in the Balkans. It is somewhat troublesome to load fully without an original stripper-charger clip. In good condition your pistol is worth about \$40-50 in the collectors' market.-S.B.

Confederate Leech & Rigdon

I have what appears to be a Leech & Rigdon revolver, serial number 756, in good to very good shape. It has slight traces of original bluing, minor pitting on the frame and barrel, and "D" stamped into the trigger guard. Can you give me an indication of its value and perhaps someway to trace what unit it was issued to?

> K. L. Rommel Lansing, Michigan

I would value an honest Leech & Rigdon at a collectors' price of around \$850 and upwards, depending upon condition and markings. I know of no such listings of serial numbers as that you seek. Not enough is known about the Confederate revolvers, and the Confederate Army was always a little too busy to keep a very good record as to where they shipped their arms-R.M.





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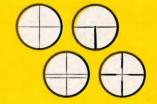
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HANDLOADING BENCH

By MAJ. GEO. C. NONTE

WHILE IT'S NOT associated with handloading, we want to tell you about a new \$1 booklet just received. It's by George V. V. Brothers, maker of GB Linspeed stock finishing products. While naturally designed to help promote Linspeed products, this book contains the best do-it-yourself course we've yet seen for finishing or refinishing a gunstock. If there's any doubt in your mind about how to do the job, just order a copy of this book from George Brothers, Great Barrington, Massachusetts 01230. We've used his Linspeed products for years and always found them eminently satisfactory.

The "Contender" single-shot, interchangeable-barrel pistol offered by Thompson-Center Arms, Farmington Rd., Rochester, N. H. 03867 is an ideal gun for the handloader. The fellow wanting to work up special loads for the one-hand gun often finds himself handicapped by the characteristics of both revolvers and auto pistols. The former isn't friendly with stifflyloaded bottle-neck cases, and the latter won't accept long cartridges, as well as being limited to functioning only with certain bullet types and within narrow limits of pressure and velocity.

With the Contender, though, one has as much loading latitude as in a bolt-action rifle. Best of all, if you want to work with another caliber, just slap on a new barrel in less than half a minute. Thompson-Center will be glad to send brochures on request.

The last and extremely important step in assembling any batch of handloads is applying a label that positively identifies the load. Without such a label, the odds are even that you'll eventually forget which is which and what is for what. The label should contain all information you consider pertinent—at the very least, caliber, bullet weight and make, powder type and charge weight. More information is often desirable, such as whether cases are new or fired, number of times fired, primer make, seating depth, etc. This depends upon how much you need to know to insure the load will be used as intended.

Scribbling data on cardboard cartridge boxes isn't enough, and plastic boxes don't hold any marking well. The solution is a pressure-sensitive label that will stick anywhere and can be peeled off and replaced. Excellent die-cut printed labels of this type are offered by Personal Firearms Record Book Co., Box 201, Park Ridge, Illinois 60068 at \$.85 (p.p.) per sheet of 30; two, sheets, \$1.45; three, \$1.85. Properly used, these labels will save you lots of headaches. We like 'em.

Primers constitute the heart of handloading. I can remember back during a couple wars when confirmed handloaders would swap almost anything for a carton of primers. Because of the primer's importance to the game, we are happy to see the RWS Boxer-type primers are now to be distributed here by Stoeger Arms, 55 Ruta Court, South Hackensack, N. J. 07606. Over the years, we've used thousands of RWS primers in many sizes and Berdan as well as boxertype. Performance has always been good. Incidentally, RWS was first, many years ago, to introduce noncorrosive primer mix. It was given the trade name, SINOXID, which is still in use and appears prominently on carton labels.

Incidentally, for the curious, the initials, "RWS," stand for Rheinisch Westfalische Sprengstoff, Nuremburg, W. Germany.

Stoeger will offer RWS primers in large rifle and pistol, small rifle and pistol, and 209 shotshell sizes at competitive prices through its regular dealers.

You ultra-small caliber fans will be happy to know that the new Hornady 25 grain, .17 caliber hollow-point bullet is now in production and your dealer can order it through normal channels. Or, you can do so directly from Hornady Mfg. Co., Box 1848, Grand Island, Nebraska, at \$4 per 100. We've not shot this one yet, but by the time you read this, we will have used it on South Dakota sod poodles in at least two different rifles.

There have been lots of inquiries about handloading the .450 Revolver (.450 Boxer, etc.) cartridge. It dates back to the middle-late 1860's and was originally designed for use in Adams percussion revolvers converted to metallic cartridge for British Army use. This makes it older than any of our center-fire handgun cartridges. Few guns encountered here are chambered for it except the Webley & Scott R. I. C. (Royal Irish Constabulary) revolvers currently offered as surplus. The R. I. C. adopted this gun in .450 caliber in 1867. The guns currently offered for sale were originally the property of the New South Wales (Australia) police.

Black powder .450 loads of indeterminate age are available from the purveyors of the guns, but the cases use a bastard primer so reloading them is difficult. New Dominion (C.I.L.) Canadian-made Boxerprimed .455 Webley cases are available, and when shortened to 0.690" length, work perfectly in .450 chambers. I've found Lyman Bullet #457195 and 3.5 grains of Unique to be an excellent load in the short R:I.C. guns. Substitute 3.0 grains of Bullseye if you prefer. Bullet #452424 also does nicely when loaded as cast, not sized down, with the same powder charges. The gun design and materials are both nearly a century behind the times, so don't try to magnumize this one. Many .450 cylinders have straight-through chambers and will accept the standard .455 case. When this is so, use the full-length case, but seat bullets deep enough so they won't protrude from that short, 1%6" R.I.C. cylinder and tie up the gun. All else failing, you can thin .45AR or .45 Colt case rims to .050", trim to length, and load as above for use in .450 cylinders. Incidentally, the .450 cartridge may be used in all .455 and .476 Enfield, Colt, S&W, and Webley revolvers.

Over the past year, I'll bet I've had 50 or more queries about interchanging the .41 Remington Magnum and Herter's .401 Powermag cartridges and also about interchanging loading data. This is undoubtedly prompted by the ready availability of .41 Magnum ammo while the .401 PM can hardly be obtained except by mail order direct from Herter's. A similar situation existed in regard to loading data until just recently. Now, you can have a mass of .401 PM load data by getting a copy of HANDLOADER'S DIGEST and turning to page 190 where Larry Sterrett expounds at length on loading this number. One warmish load uses 13.8 grains of Alcan's AL-7 Powder to drive a 170-grain swaged, hollowpoint, semi-wadcutter bullet at 1397 fps. Sterrett recommends starting well below this load and working up.

No, the .401 and .41 cannot be interchanged. The latter has a nominal case diameter of .432-433" and will not enter the smaller 401 chamber. Likewise, the .41 bullet runs .410" diameter, much too large for the .401-402" groove diameter of the .401 barrel. On the other hand, the .401 cartridge will enter the .41 chamber and fire safely, albeit with somewhat excessive case expansion. Accuracy and velocity of the undersized bullet will be less than normal from the .41 barrel.

In answer to one specific question, the difference in barrel and bullet dimensions precludes rechambering .401 guns for the .41 cartridge unless a new barrel of proper groove diameter is fitted or the original barrel is rebored and re-rifled.

All of this simply means, don't swap either loaded cartridges or components in these two calibers, even though they are so alike you need a micrometer to tell the difference. Those differences are small, to be sure, but they're damned important.

Performance-wise, the .401 Powermag can be handloaded right along with the .41 Magnum. Assuming bullets of correct size and of the same weight are used, .41 Magnum loading data can be used in the .401. Just don't try the top loads except by beginning low and working up to them. Best bet, though, is the dope contained in HANDLOADER'S DIGEST No. 4, now available from The Gun Digest Company, 4540 W. Madison St., Chicago, Illinois 60624 for \$4.95.

Recent information received from Lee Jurras, Super-Vel Cartridge Corp., lists the following velocities obtained in short-barrel revolvers:

.38 S	pecial.	110	gr. SI	P
	6" b	bl	1270	fps
			1140	
	2"	77	1030	fps
.357	Mag.,	110 \$	gr. SI	P
			1420	
			1685	
	6"	bbl	1570	fps

That's doing right well, indeed from even the shortest tubes normally available. The handloads for Super-Vel bullets we published here some time back (Guns, July, 1968) will produce, percentagewise, essentially the same velocities in the shorter barrel lengths.

Gotta go shoot now-more next time.





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By CARL WOLFF

THOUGHT FOR THE MONTH

From the Congressional Record by Senator Thomas Dodd: "Show me the man who doesn't want his gun registered, and I will show you a man who shouldn't have a gun."

In November gun owners like other Americans will go into the voting booth and cast their votes for the candidate of their choice. The big issue is crime. How they will vote, as a group, could decide the election. It would be sad if the gun owners rejected all other considerations but the candidate's position on anti-gun legislation. However, there are many other points that go with the anti-gun philosophy.

Probably the most anti-gun man here in Washington is James V. Bennett who heads two nationally known anti-gun groups. GUNS Magazine exposed two years ago the fact that he is being paid by the Justice Department. There is the obvious conflict: It is against the law to lobby with federal funds.

The same Justice Department released this July a report, "Firearms Facts". According to the New York Times, an antigun newspaper, this report was the first time that the Department, "lobbying intensively for a bill to halt interstate arms sales, had put together all the available data on firearms in this country."

According to a recent copy of the Congressional Record, Mr. Bennett is also for strict people control. Back when he was a full time Justice Department employee, this same Mr. Bennett had the militant rightwinger, General Walker, unlawfully committed to a mental institution. General Walker, however, was shortly released and was again back in the business of molding public opinion. The act smelled of political considerations and the conservatives have made repeated comments about it.

It was acts like this that led the 1968 Republican Platform to pledge, if elected, a "Leadership by an Attorney General (who heads the Justice Department) who will restore stature and respect to that office."

So much for dealing with right wingers. The Administration's dealings with left-wingers have been a bit different, according to the Republicans. Another section of their 1968 platform charges, "the present administration has failed to deal effectively with threats to the nation's internal security by not prosecuting identified subversives."

The 1968 Republican Platform called for the following on gun controls: "Enactment of legislation to control indiscriminate availability of firearms, safeguarding the right of responsible citizens to collect, own and use firearms for legitimate purposes, retaining primary responsibility at the state level, with such federal laws as necessary to better enable the states to meet their responsibilities." This is, of course, fuzzy language. The Democrats were only a bit more to the point: "Promote the passage and enforcement of effective federal, state and local gun control legislation."

How bad is the crime rate? According to the F.B.I.'s Uniform Crime Report in 1957 there were 1,922 serious crimes per 100,000 population, up 15 percent. The property crime rate was 1,672 victims, up 15 percent over 1966. Since 1960, the serious crime rate, or the risk of becoming a victim (Continued on next page)

OUR MAN IN WASHINGTON

of crime, has increased 71 percent. There has been an increase in the population. The real increase in crime victims has risen 89 percent.

The cause of the increase is juvenile delinquency. According to FBI Director Hoover the facts are overwhelming. More youths under 15 are arrested for serious crimes than adults over 25. One out of every two persons arrested for burglary last year was under 18. Seventy percent of those under 20 released from custody on probation, parole, or at the end of a sentence, in 1963, were re-arrested within four years.

The report did not give the percentage of convictions. If an arrest was made the crime was considered

BIG

"cleared." The police nationally "cleared" only 22.4 percent of the serious crimes.

All of which leads to one conclusion, there are hordes of young juvenile delinquents causing the crime boom. This leads us back to the sportsman's friend who heads up the Senate Juvenile Delinguency Subcommittee, Senator Thomas Dodd.

While Mr. Dodd has been fooling around with anti-gun legislation, legislation which should have been before another committee of the Senate, his anti-juvenile delinguency work, has suffered. It is part of what Congressman Bob Casey calls "swatting at gnats while elephants destroy the countryside." Guns are misused in less than five percent of the serious crimes. According to the FBI, juvenile delinquents are involved 6 in 50% of the serious crimes!

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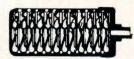
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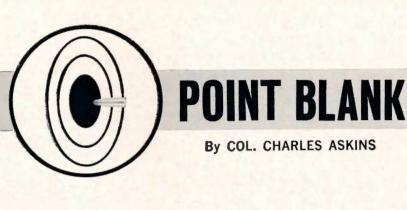
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The idea of auxiliary barrels for the shotgun is not new. There was just such a device in 1880. It was an insert barrel to handle rifle cartridges, such loads as the .44 and the .45 and a tang sight was furnished so that accuracy was improved. Since then there has been a multitude of chambers and inner barrels for not only the shotgun but also the rifle.

The U.S. Navy with a lot of old M-1 rifles on hand and a shrinking supply of .30-06 cartridges came up with a novel idea as to how to fire the 7.62 mm (.308) round in the longer '06 chamber. They simply made a chamber insert which fits into the forward end of the .30-06 chamber and takes up that 1/2-inch of length. The device is slipped over the loaded 7.62 cartridge and the whole is then fired in the M-1 chamber. Presto, it is emplaced and thereafter the old rifle will handle the shorter cartridge. Of course the bullet has to make that .5-inch jump to get into the barrel but this is not reckoned as too serious especially in a combat rifle. The South Vietnamese army as well as the South Koreans are still armed with the M-1. It would be good business to make up enough of these Navy inserts to convert these rifles to the 7.62 cartridge.

Shotguns are not the only firearms to be equipped with accessory chambers and barrels. I came home from Germany after the ruckus of 1939-45 with a complete .22 cal. unit for the '98 Mauser. This consisted of an insert barrel to which was firmly screwed a receiver and bolt. The unit slipped

into the '98 from the rear and locked into place. There was a separate bolt which served to close up the breech for the firing of the .22 cartridge. It was not very accurate. A friend fetched back with him a similar outfit for the Luger 9 mm pistol. It consisted of an accessory barrel bored and chambered for the .22 long rifle together with an auxiliary breechblock and magazine. The unit was beautifully packaged in a walnut case. How it shot I never knew.

There is a German barrel insert of .22 caliber for 16 and 12 gauge shotguns. It is inserted in break-open shotguns and is offset so that the firing pin will strike the rimfire case. The length is approximately 14 inches. It is firmly wedged in the barrel and shoots well. The Numrich Barrelette is a similar device. It is made for 12, 16 and 20 gauge guns, is inserted in break-breech guns and is held in place with a setscrew. If some kind of a rear sight is attached to the shotgun. such as a low powered scope, the Numrich shoots very well.

The Alcan Co., Alton, Ill., make a chamber adaptor for firing the .45 Colt shot cartridge, or the .45 blank, This is an insert chamber and is not as long as the 12 gauge chamber. It is intended for use in training dogs. It should not be used with ball ammo. It is made of brass and is available for the 10, 12, 16, and 20 gauges.

Marbles Arms Corp. for many years offered their Marbles Auxiliary cartridge. These were made of steel and were the exact dimension of a rifle cartridge. In the mouth of this steel casing were a series of finger-like springs, which accepted a pistol cartridge. Within the casing was a separate firing pin. For such cartridges as the .30-06, the .30-40 and the .30-30 the .32 S&W pistol cartridge was used. Altogether the auxiliary cartridge was offered in 25 different calibers. The idea of the device was to provide a cheaper practice for the rifleman, handloading not having reached its degree of development in those days

GUNS • DECEMBER 1968

that it enjoys now. The cartridge sold in the '20s and '30s for 75¢. It was discontinued in 1961.

Winchester had a similar offering. It was available in thirty caliber for such favorites as the .30-30, the .303 and the .30-06. It too fired the .32 S&W revolver cartridge. In the Winchester auxiliary the casing was made of steel like the Marbles and of course had the same specs as a regular cartridge. The pistol cartridge was loaded from the rear. The idea of these was that in the hunting camp where the sportsman did not want to alarm the big game in the area he could shoot the heads off grouse and rabbits with the .32 pistol load in the accessory chamber, and the noise would not be enough to alarm his primary target. The Winchester gizmo has been discontinued.

NEVER TEST fired the Winchester chamber but I did shoot the Marbles a good deal. In a .30-40 and also in a .22 Hi-Power, neither was accurate enough to be sure of hitting a grouse in the head. This was not so much the fault of the Marbles device as it was the fault of the .32 S&W cartridge. This load was not put up by the factory for any kind of precise shooting. The 98-gr. round nose leaden bullet was not stable in the .30-40 barrel and this added to its poor showing. As for the .22 long rifle in the .22 Hi-Power this was simply a poor fit. The .22 Hi-Power has a .227" barrel and this is a bit sloppy for the .222 bullet. At any rate precision was not much. Certainly not of such gilt-edge as to consider using the auxiliary cartridge for either small game taking nor yet target practice.

A development called the Zip Reload chamber was more accurate. This adaptor used a blank cartridge which was made up by the Peters Cartridge Co. The blank fitted into the device and in the front end a regular lightweight bullet was fitted into the neck. The Zip unscrewed in the middle to permit the insertion of the blank which was a bottleneck. I fired a lot of these cartridges in the '06 and with the 115-gr. cast Lyman bullet accuracy at the short ranges was good. I do not believe the Zip chamber is any longer in manufacture.

The Winchester Model 50 autoloading 12 gauge had a special floating chamber. It was recoil operated and the chamber by its separate construction provided the necessary oomph to function the action. Simmons Gun Specialties of Kansas City, adapted a special 20 gauge chamber to this gun. It worked very well. And contrary to theory the wadding held the powder gases sufficiently well to prevent the hot stuff from disrupting the pattern. I shot the M-50 with the Simmons chamber in it at skeet and I found that scores ran just as high as they did with any 20 bore gun I had in my battery.

In 1961, Smith & Wesson came out with the K-model revolver chambered for the .22 Rem. Jet cartridge. This was the first of the hotrock centerfire twenty-two loadings. The revolver has two firing pins, one for the centerfire and the other for the .22 long rifle. To fire the latter the company provided a set of six chamber inserts. These accept the .22 rimfire cartridge and thus permit the shooter a cheaper sort of practice. It is a very worthwhile innovation.

Last winter I journeyed up to Oklahoma for a week of quail shooting. I took with me my favorite quail gun, a Browning over/under 12-gauge gun with 26-inch barrels bored improved cylinder both top and bottom. I often shoot skeet with this shotgun and swap the various tubes in the Browning "Super Tubes" set in it. Sometimes shooting it as a 20 bore, other times as a 28, and occasionally as a .410.

On the foray into the land of the Okies I took this shotgun and 100 cartridges. On the first day of shooting I walked up on the point, dipping into my hunting coat for a pair of 12 gauge shells. These would not fit. I glanced down and noticed at once that I had left the 20 gauge tubes in the gun after my last session at skeet. Here was a fine kettle of fish! I could punch the 20 gauge insert barrels out of the gun but this would not help since the ejectors for the 12 gauge cartridges were back in Texas.

My hunting partner, a boyhood chum, was shooting a 20 gauge Browning automatic. I simply stepped over to the pickup and helped myself to a box of his 20s. For the remainder of the week I shot his shells. The 16inch full cylinder insert tubes in the Browning killed quail with fine dispatch.

At last year's national benchrest matches it was interesting to see how the benchresters scrubbed out the bores of their tackdrivers after virtually every match. These sharks used both bore cleaning solvents and brass brushes. They are such a meticulous crew you may be sure that someone within their ranks proved to the satisfaction of all that it was necessary.

My own experience has been that guns don't need much cleaning any more. Forty years ago when Remington came along with Kleanbore our cleaning problem commenced to dissipate. Now with noncorrosive primers

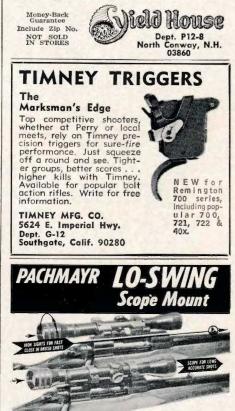
(Continued on page 54)



LOCKING PISTOI CABINET

Locks and displays up to 10 weapons Locks and displays up to 10 weapons Simple, safe, beautiful - It locks and displays weapons of any size, antique or modern. Arrange or rearrange pistols at will - natural beige or red burlap (specify) conceals hanger holes in back panel. Special rubber coated screw-in hangers safeguard guns. Large drawer for ammo, cleaning gear, etc. One key unlocks drawer and unbreakable silding plexiglass front. Here is clean, unobstructed display for the finest hand guns - ideal for other displays, too. 30³4''W. 24''H. 6''D. In rich grained honey tone pine or maple, antique pine or wal-nut finish. \$34.95 Exp. Chgs. Col. COMPLETE KIT: Easy assembly - at nearly half the price. \$21.95 Post-paid. Add \$1.25 West of Miss. This is but one of our complete line of original, patented, safe-lock gun racks and cabinets - floor, wall and table models. BEAUTIFUL NEW FREE CATALOGUE - 1000 PIECES

BEAUTIFUL NEW FREE CATALOGUE - 1000 PIECES Finished and Kit Furniture in Friendly Pine



two important advantages in one mount. Combines Provides instant use of open sights and a scope mounted as low as possible on your rifle. For those fast, close in brush shots or spotting, scope can be swung to the side to allow instant use of your iron sights. Don't let fogged lenses or a damaged scope spoil your chance of a kill. The upper rings of the Lo-Swing mount makes detaching your scope easy - ready to replace upon arrival of your Notice stops and the stop of the stop of

The author uses the Charter Arms .38 cal. Undercover to show the importance of timing.

By MASON WILLIAMS

ONE OF THE BASIC purposes of a revolver mechanism is to line up each of the cylinder chambers with the rear of the barrel so that the bullet may enter the barrel without excessive deformation or lead shaving. In order to do this the cylinder must rotate and then lock securely prior to firing the cartridge. This simply stated function of the revolver mechanism involves two separate adjustments that must be coordinated to produce safe shooting, and yet both adjustments remain unknown to the average handgun owner or are misunderstood.

These two adjustments are known as timing and ranging. Why are these two adjustments so important to the revolver owner? Let's start with timing. In order to bring a new chamber into alignment with the rear of the barrel the cylinder must rotate, activated by a hand that extends through the recoil plate of the rear of the frame to engage a notch cut into the rear of the ejector assembly. The distance that the hand extends during its movement controls how far the cylinder will rotate, thus a hand may turn the cylinder too far or it may not turn the cylinder far enough. If too short it cannot rotate the cylinder far enough. If too long, the hand can move the cylinder too far. The distance that the hand extends through the recoil plate is controlled by the internal mechanism of the revolver action. This movement is plotted in advance and every attempt is made to provide for a maximum movement of the hand rather

THE

INSIDE

STORY

OF



The cylinder stop, rising out of the bottom of the frame, engages a locking cut of the cylinder stop notch. As the trigger is pulled, the stop is withdrawn and the hand rotates the cylinder.



The action of hand (see pointer) rotates the cylinder; it does this by bearing against the ratchet assembly. GUNS • DECEMBER 1968



The ratchet consists of a series of cuts and lugs that act with the hand to give the cylinder its proper turn.



REVOLVER TIMING

In the final check of ranging, a rod is run through the muzzle to the rear of each chamber. If the rod fails to enter the chamber it indicates that ranging is faulty.

than a minimum movement of the hand.

The basic design calls for a hand that is long rather than short. Unfortunately, the mass production of hands and the wearing of tools and dies and the occasional combination of a minimum part fitted to a group of maximum parts can often play hob with a well designed mechanism. That is why the assemblers of handguns and the final inspectors are craftsmen, not unskilled laborers. In order to learn about these details I spent a day listening to and watching the key men of Charter Arms, Inc., manufacturers of the Undercover cal. .38 Special revolvers. This plant is completely modern with a built-in continual improvement department that rivals the now-famous VW concept of constant improvement without fanfare. They looked over my two "old" Charter Arms Undercover revolvers—one with a two inch barrel and one with the newer three inch barrel—



Any looseness in the fit of the cylinder crane can affect ranging. This area should be checked very carefully. and promptly proceeded to re-build both of them giving me a running commentary on timing, ranging and assembling.

But let's get back to the question of timing. The hand can only turn the revolver cylinder by bearing against something at the rear of the cylinder. This something is called a ratchet and is an integral part of the ejector mechanism. It consists of a series of machined cuts and lugs that have been so designed that they will give a five shot cylinder a one fifth turn providing the hand pushes the correct portion of the ratchet far enough. If both the hand and the ratchet meet correctly, at the end of the cocking movement of the revolver mechanism a cylinder chamber should be lined up with the rear of the barrel. So far so good.

But we have nothing as yet to retain the cylinder in this position. This is where the cylinder stop notch comes into play along with the cylinder stop. Everyone who has owned a revolver has seen the cylinder stop notches machined into the outside rear area of the cylinder. The cylinder stop rises out of the bottom of the revolver frame to engage the locking cut of the cylinder stop notch thereby locking the cylinder into place. As the trigger is pulled the revolver mechanism withdraws this cylinder stop from out of the cylinder stop notch allowing the hand to again rotate the cylinder to bring the next chamber into place. Just before the next chamber revolves into place the cylinder stop rises from its cut in the frame to commence bearing lightly against the inclined plane that leads the stop into the cut in the cylinder. This "anticipation" by the cylinder stop is called "early lock-up" and is desirable. It would be impractical to ask the cylinder stop to rise directly into the final locking cut therefore most assemblers attempt to make the cylinder stop rise at least twice its thickness ahead of time to snap securely into the final locking cut.

This early lock-up is the result of the correct relationship between the hand and the ejector ratchet. When the hand wears down in use or when other parts wear excessively the delicate relationship between the hand and the ratchet will throw the revolver out of time. This takes place slowly and imperceptibly in a well designed and constructed revolver but in a much shorter time in the case of cheaper handguns. (Continued on page 58)

ARE YOU HANDLOADING FOR VELOCITY?

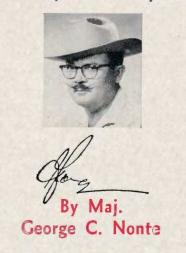
Some handloaders are "bullet racers," others load for peak bullet performance

				11	
		VELOCITY			
POWDER	3500 fps	3600 fps	3700 fps	3800 fps	A min
3031		67.0 gr.	68.6 gr.		10ml
4064	67.7 gr.	69.2 gr.	70.7 gr.		N Start
4895	67.9 gr.	69.7 gr.	71.4 gr.		
4320	70.2 gr.	71.7 gr.	73.2 gr.		
H380	68.9 gr.	71.0 gr.			
4350	77.9 gr.	79.9 gr.			

H ANDLOADING is a bit like tooling your favorite gas buggy down the freeway. You can, if you must, roar ahead, extracting the last iota of performance, straining everything to the hilt, and arrive at your destination mere minutes ahead of the guy who loafed along, relaxed, enjoyed the scenery, and took a lot fewer chances.

And, so it is with the way a lot of fellows go about their handloading. Maximum velocity and attendant maximum (sometimes) pressures seem to constitute the major goal. Magical properties seem to be ascribed to bullets moving just a bit faster than is customary. Somewhere along the line, some handloaders have gotten the idea that by simply driving a bullet faster than does the comparable factory load that they are achieving a significant performance improvement. Maybe so, if you consider speed the only criterion of automobile performance, or bosom measurement the primary ingredient of feminine pulchritude. But, there are other things in life, and it really doesn't pay to stumble into that ageold pitfall of "too much of a good thing."

The objective of handloading is, of course, to improve performance. But, just what do we mean by "improved performance"? I can only answer this question in terms of my own thinking. Improving performance simply means that the bullet will do its job better. The bullet's job consists of many things, some of which must be traded off against others in order to obtain a clean kill or the smallest possible group on target. More often than not, those goals are not compatible with maximum velocity. The bullet's job is to



strike as close as possible to the point of aim and to produce a quick, clean kill.

Let's examine the problems that beset a typical handloader when he gets on the velocity kick. Take, for example, the .270 Winchester cartridge and the

fact that our shooter has decided he wants to use it to knock off a few spring varmints. He immediately goes to his loading manuals looking for a combination of a light, pointed bullet that will provide explosive expansion and maximum velocity. Varmint shooters have always made much of high velocity and it certainly does have its advantages for this type of shooting. In the various manuals, he finds that a 100-grain spitzer softpoint bullet can be driven at roughly 3500 fps by a large number of standard powders. If he's surplus-powder oriented, he will find a charge of 64 grains of 4831 listed as producing approximately 3475 fps. The fact that the manual in guestion shows this as a maximum load accompanied by a caution note will often not make much of an impression. First of all, he will figure that the manual publisher allowed a substantial safety factor and that, therefore, he can start right in with the maximum load. That is his second mistake. The first was in assuming that the load producing the highest velocity would be best for his purpose.

Varmint shooting requires a high degree of accuracy. Prairie dogs at 200 to 300 yards offer margin of error. Our aspiring varmint shooter will probably convince (Continued on page 50)

POINTING THE SHOTGUN



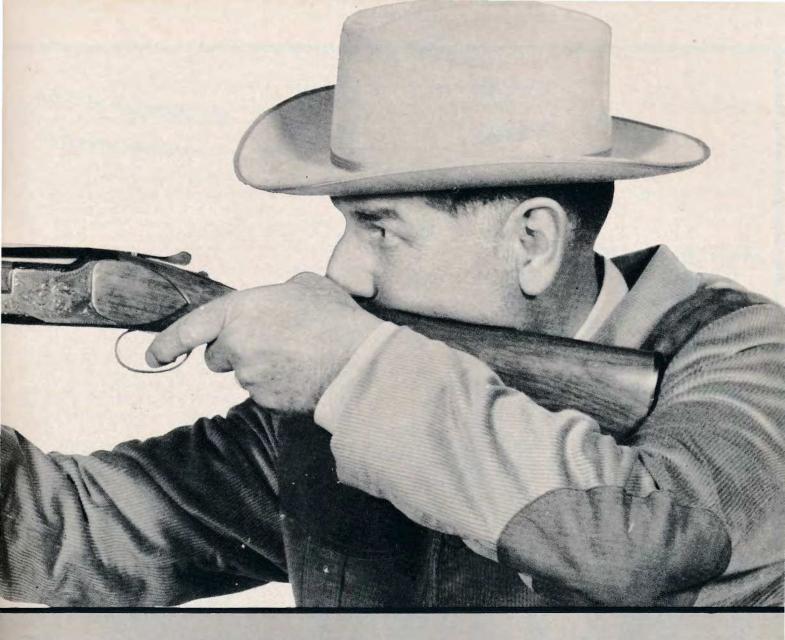
By CHARLES ASKINS

I F A'MAN weighs 150 pounds and stands 5' 9" he can shoot the 12 gauge shotgun with no trouble. If he is smaller than that he might be wise to stick with the 20. The 12 has a punishing recoil for the small man and not only does this ruin his pleasure but it often makes it more difficult for him to shoot well. The 12 should not weigh more than $7\frac{1}{2}$ pounds in an uplands gun and not more than $8\frac{3}{4}$ lb, in the wildfowl piece. Goose guns range heavier but these are specialized models and we aren't considering them here. The 20 gauge may weigh $6\frac{1}{2}$ lb in the uplands type and $7\frac{3}{4}$ pounds for the duck gun.

A scattergun—in my opinion—should have only one barrel to look over; like the pump repeater, the autoloader and the over-under. Double guns with the conventional side-by-side arrangement are difficult to point. On the single barrel gun there may be a raised ventilated rib, which is a mighty worthwhile accessory. It helps to look down this rail and improves the aim. Ordinarily the rib has two sights, one at the muzzle and the other about midway down the barrel. The best purpose of the two beads is to keep the shotgun shooter from the error of cross-firing.

When the shooter holds the gun at shoulder and looks down the rib he can tell if the shotgun fits him by the picture he gets. He should be able to see every inch of the rib. Also, all of the top of the receiver. If he sees only the two beads then the gun does not fit; it will shoot low. If, on the other hand, he can see the rib and the barrel and the receiver then the piece will shoot about 12 inches high at 40 yards. This is the way it should be. The shotgun is deliberately stocked at the factory to fire high. It is made that way because the wingshot does not aim at his flyer but under it. This is so he can watch any turns or changes of direction that the target may make.

For most shooters, the stock should have a length of pull of 14 inches—the distance from the trigger to the center line of the butt. The drop at the comb ought to be 1½ or 15% inches; this is measured from the point of the comb upward to a straight edge along the top of the rib and projecting over the comb. Some guns now have Monte Carlo combs, which have the same measurement from end to end. It does not mat-



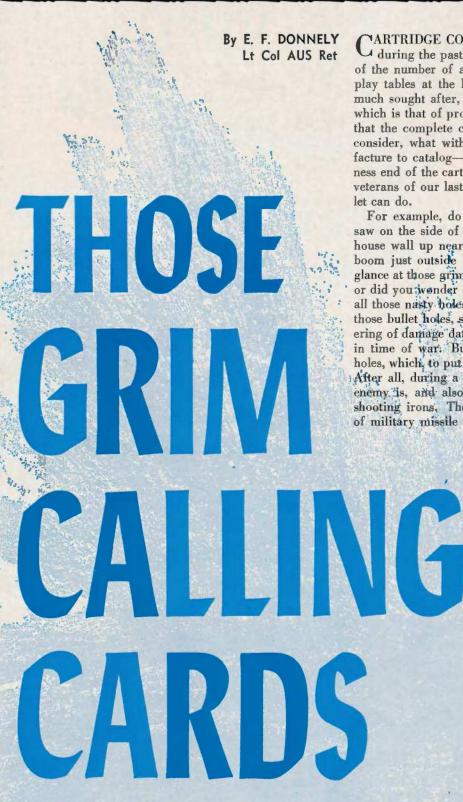
ter with this type of comb where you lay your face. You will get the same drop wherever your chops may come to rest. This contributes to better hitting.

A recoil pad is awfully worthwhlle. It absorbs something like 10% of the kick and the soft edges eliminate bruising of the shoulder from slamming the gun to shoulder hastily. Even on the 20 gauge it is a good investment since the 20 can now be loaded as heavily as the 12. Because it is rubber the pad tends to stick once the stock is cradled in the hollow of the shoulder, and this is a help, especially on second and third shots.

The forestock is almost as important as the main stock. If it is bulbous and overfat it will locate the forward hand out of line with the trigger hand. Then when the gun is mounted fast, the muzzle will be thrown too high, and the shot will be a miss. The hands must be in the same alignment and in the same horizontal plane. A fore-end that is too splintery —as you often see on double gun—will cause under shooting for the same reason. The forward hand is the more important of the two (Continued on page 58)

SPEED OF GAME BIRDS AND LEADS

Bird	Speed feet per second	Average Speed	Theoretical Lead (40 yd)	Practical Lead (40 yd)	
Prairie Chicken	60 to 80	70	8.7 ft	4 to 5 ft	
Quail	60 to 80	70	8.7	4 to 5	
Ruffed grouse	65 to 80	72	9	5	
Dove	70 to 90	80	9.8	5	
Jacksnipe	50 to 70	60	7.3	4	
Mallard	50 to 90	70	8.7	4 to 5	
Black duck	50 to 90	70	8.7	4 to 5	
Spoonbill	50 to 90	70	8.7	4 to 5	
Pintail	60 to 90	75	9.2	5	
Wood duck	60 to 80	70	8.7	4 to 5	
Widgeon	70 to 85	77	9.5	5	
Gadwall	70 to 80	77	9.5	5	
Redhead	80 to 90	85	10.4	5 to 6	
Blue-wing teal	75 to 95	85	10.4	5 to 6	
Green-wing teal	80 to 90	85	10.4	5 to 6	
Canvasback	90 to 100	95	11.6	6 to 7	
Canada goose	80 to 90	85	10.4	5 to 6	
Brant	80 to 90	85	10.4	5 to 6	



CARTRIDGE COLLECTING HAS REALLY come into its own during the past decade: a fact quite evident, if notice is taken of the number of avid collectors milling about the cartridge display tables at the better gun shows. In fact, the cartridge is so much sought after, that one often loses sight of its real purpose, which is that of providing fodder for a firearm. No one can deny that the complete cartridge is not of itself an interesting item to consider, what with its classification, origin, and year of manufacture to catalog—but again, what about that bullet at the business end of the cartridge case? Certainly hunters, policemen, and veterans of our last several wars are well aware of what that bullet can do.

For example, do you remember the string of bullet holes you saw on the side of that jeep in Normandy back in '44? Or on a house wall up near the Yalu in 1950? Or on that helicopter tail boom just outside Da Nang, somewhat more recently? Did you glance at those grim calling cards, and then promptly forget them; or did you wonder as to what particular type of bullet had caused all those nasty holes? The chances are that if you didn't examine those bullet holes, some other uniformed buddy did, for the gathering of damage data caused by hostile fire is a continuing process in time of war. But why would anybody be interested in bullet holes, which to put it mildly, are quite common in a combat area? After all, during a war, one usually knows only too well who the, enemy is, and also what he is carrying in the way of portable shooting irons. The answer then, as to the whys and wherefores of military missile identification efforts, can be boiled down to a

IDENTIFICATION OF COMPLETE CARTRIDGES IS EASY, BUT HOW DO YOU IDENTIFY A USED AND OFTENTIMES MANGLED BULLET?





Flat base bullet fired from a barrel with right hand twist.

Boattailed bullet fired from barrel with left hand twist.

RIFLING CHARACTERISTICS OF FOREIGN & DOMESTIC WEAPONS

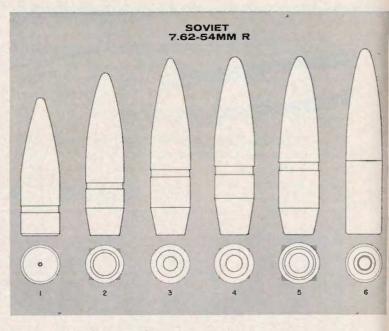
NATION	CALIBER	LANDS & GROOVES	RIGHT OR LEFT TWIST
Austria	8-50.5mmR (8-50mmR Steyr) Rifle & Machine Gun *	4	Right
England	7.7-56mmR (.303 British) S.M.L.E. Rifle	5	Left
	7.7-56mmR (.303 British) British Rifle No. 4 Mk I	2	Left
	7.92-57mm Besa Machine Gun	4	Right
	.380 Mark II Enfield Revolver	7	Right
	.455 Webley Service Revolver	7	Right
rance	7.65mm Long Pistol & Submachine Gun	6	Left
France Germany Italy Japan	9mm Parabellum Pistol & SMG	6	Left
	7.5-54mm Rifle & Machine Gun	4	Left
	8-50.5mmR (8mm Lebel) Rifle & Machine Gun	4	Left
Germany	9mm Parabellum (9mm Luger) Pistol & SMG	6	Right
	7.92-57mm Rifle & Machine Gun	4	Right
Italy	6.5-52.5mm Rifle & Machine Gun	4	Right
lapan	6.5-50.5mmSR Arisaka Carbine **	4	Right
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	6.5-50.5mmSR Arisaka Rifle	6	Right
Section and the	7.7-58mm Type 99 Rifle	4	Right
Spain	7-57mm M-95 Rifle	4	Right
Switzerland	7.5-55.5mm Schmidt-Rubin Rifle M11	3	Right
U.S.A.	5.56-45mm (.223 Remington) M-16 Rifle	6	Right
	Cal .30 Carbine	4	Right
	Cal .30 (7.62-63mm) (.30-06) M1903 & M1 Rifles	4	Right
	Cal. 30 (7.62-63mm) (.30-06) M1903A3 Rifles	2 & 4	Right
	Cal .30 (7.62-63mm) (.30-06) M1917 Enfield	5	Left
	Cal 7.62-51mm (7.62mm NATO) (.308 Win.) M-14	4	Right
	7.65mm Browning (.32 Colt Auto Pistol)	6	Left
	9mm Parabellum M-3 Submachine Gun	6	Right
	.45 A.C.P. used in M1911 Pistol	6	Left
	.45 A.C.P. used in M1917 Colt Revolver	6	Left
	.45 A.C.P. used in the M-3 Submachine Gun	4	Right
	.45 A.C.P. used in Thompson Submachine Gun	6	Right
	.45 A.C.P. used in the M1917 S&W Revolver	6	Right
	.50 Browning (12.7-99mm) Browning Machine Gun	8	Right
	20mm Guns M3, M39, M61, M1, and M2	9	Right
lussia	7.62-25mm Pistol & Submachine Gun	4	Right
&	9mm Makarov Pistol (9.2-18mm)	4	Right
ron	7.62-54mmR Rifle & Machine Gun	4	Right
urtain	7.62-39mm M43 (The AK-47 Cartridge) Rifle & L.M.G.	4	Right
lations	12.7-108mm Heavy Machine Gun cartridge	8	Right
	14.5-114mm Soviet ZPU Machine Guns	8	Right
	20mm SchVAK Aircraft/Cannon	8	Right
	23mm Aircraft Cannon (23-150.5mm)	10	Right

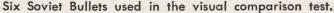
GRIM CALLING CARDS

few simple reasons. First, each warring nation desires to know if its opponent is still using the same military hardware it had been known to possess just prior to the outbreak of hostilities. Secondly, by a continuous study of incoming projectiles, it can be determined whether or not the enemy has developed anything new or better in the way of projectiles. Lastly, along the lines of "It's nice to know who one's friends and allies are", a study of incoming projectiles will often reveal just who is supplying the enemy with what in the way of ammunition and weapons.

It is the objective of this article to acquaint the average gun enthusiast with some of the more elementary techniques that can identify fired military bullets which have impacted hard and fast on such targets as trees and foliage, vehicles, aircraft, walls, Mother Earth, etc. When they do, they badly damage themselves as far as identification possibilities are concerned. With impacting forces released on a target amounting to anywhere from a few hundred foot-pounds of energy, to well over several tons, military bullets often lose their identity completely and become almost unrecognizable pieces of scrap metal. The curled up, peeled back, warped, broken fragments or remnants present a real, but in most cases, not an insurmountable problem—if one knows his bullets.

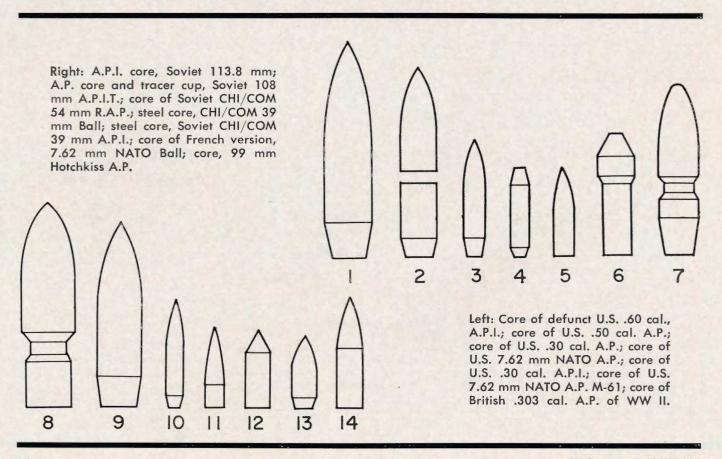
Like everything else in this world, military bullets have length, weight, size, distinctive configuration, and a definite purpose—statistics well documented in the technical service intelligence publications of all the major powers. By way of classification, military bullets are categorized according to mission, the terms being common the world over. The first



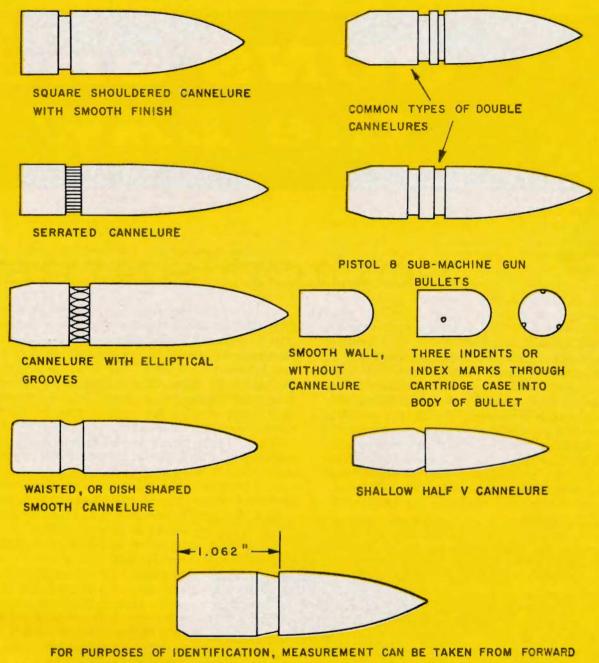


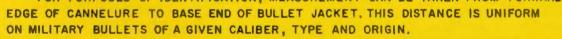
of these is the Ball, a general purpose or anti-personnel type bullet. Other bullets currently in use, and functionally descriptive in their abbreviations, are labeled as follows: the A.P. armor piercing bullet; the A.P.I. armor piercing incendiary bullet; the A.P.I.T. armor piercing incendiary tracer bullet; the Incendiary bullet; the Tracer bullet; and even the H.E.I. bullet, which carries a small load of high explosive and incendiary composition beneath its jacket.

In addition, many of the military forces of the world also



CANNELURE TYPES AND CONFIGURATIONS





manufacture frangible bullets, spotter round or observation bullets, special guard or sentry type bullets, wooden bullets, paper bullets, plastic bullets, hard wax bullets, lead bullets for short range gallery practice, and exceptionally well made bullets for long range target shooting or sniping. Thus it can be readily seen that if one expects to be able to identify unknown fired military bullets he must not only be familiar with all current military small arms ammunition, but also well up on established recognition techniques and procedures.

As one might suspect then, the first of these techniques

requires that the operator be well acquainted with the various types of rifling presently in use by the military, for when dealing with a fired bullet, the ability to recognize at least two unmistakable clues may give him the lead he needs to make a positive identification almost immediately. The clues concern the number of land and groove marks engraved on the fired bullet's jacket, and also the directional rotation or twist of such marks (i.e. whether to right or left). Such obvious clues should be a simple enough procedure, but then perhaps it is not quite as simple as it would at first appear, for at this *(Continued on page 61)*

GUNS and the LAW

POLICE SNIPER

LAST JULY, three Cleveland policemen were slain by extremists, eighteen Cincinnati police were fired on during a racial disturbance and two Seattle policemen were wounded by concealed snipers. In August, two New York City policemen were lured into an ambush and shot. The tempo of mob violence coupled with arson, looting and guns fired in anger is increasing. This has been a predictable situation that many police departments have prepared for, while others hampered by political and budgetary restraints are, as yet, unprepared. The incident in Cleveland resulted in the state mobilization of 15,000 Ohio National Guardsmen, 4,000 of whom were dispatched to Cleveland to help the police quell the wave of arson and looting, triggered by the shooting.

The Cleveland shooting incidents resulted in ten dead and nineteen wounded and injured. The majority of these casualties occurred during the first hour, long before the National Guard Troops were on the scene. This points up the fact that civil law enforcement must be equipped, trained, and organized to meet the criminal challenge of gunfire with the full backing of political and public officials. It is a certain fact that the National Guard and other military components cannot be maintained on permanent police duty. The political and cost factors will not permit this approach, which is only an expedient one. The challenge must be met squarely by law enforcement everywhere.

The dictionary defines a sniper as a "soldier, who, from some unexpected place of concealment, picks off those of the enemy that expose themselves to his fire." The term sniping freely used by the press and TV media, mistakenly conjures up in the minds of many people, the expert marksman, equipped with a high velocity rifle and telescopic sight, who is able to kill from great distances with extraordinary accuracy, etc. Whereas the word sniping as used in the news media, generally describes rioter and extremist use of any and all types of firearms in a civil disturbance. Ordinarily, this is an action where a relatively unskilled individual, from a concealed position, such as a roof top, room, etc., using any type weapon, fires indiscriminately at police, firemen, and targets of opportunity, such as civilians in the street. Killing accuracy and the selection of targets, the hallmark of the trained professional sniper, are not necessarily present. No special excellence in marksmanship is involved and the incident centers around the possession and use of any firearm, fired in a hostile manner from a concealed position. Most often, the weapons used by this type of sniper are sporting types and the targets which he fires at are those which can occur during any riot action and do not indicate any deliberate, planned intent to kill selected police officials, or certain civilians in authority, etc.

Now however, police must also anticipate situations where determined, trained individuals, some with scope sighted high velocity rifles and carbines, will practice the art of sniping and ambush as does the professional soldier. The appearance of the sniper, expert or not, in recent civil disorders has so changed the character of civil disturbance control that on presidential order, special counter-sniper training has now been given to National Guard, Reserve, and regular Army units. Likewise, civil law enforcement agencies must prepare to counter all types of sniper actions. Counter-sniping training and equipment should now be considered, in varying degrees, in urban police department training programs, planning, and budgeting.

To date, the sniping that has occurred in ghetto areas, where ranges are usually limited, has mostly taken place under the cover of darkness and from areas where it has been difficult to "find and fix" the person firing. Calibers of weapons have been varied. The majority of incidents reported have indicated that the types of weapons most commonly used against police have been in the shotgun, .22 rimfire and center fire pistol caliber categories.

More recently, organized, skilled snipers with high velocity and scope sighted weapons have engaged the police during violent riot actions. This should be considered a natural development as basic sniping techniques are known. The stated intent of various extremist groups plus information gathered from police intelligence indicate this trend. Infantry veterans with recent military service are amongst those most likely to be objects of recruitment by revolution-



PROBLEMS

ary-subversive elements for skilled sniping purposes.

In any well organized, pre-planned riot action, deliberate sniper fire will usually be combined with arson, use of molotov cocktails and explosives to divide, immobilize, disorganize and divert police and fire fighting forces. Some selective fire will be directed at key officers and officials, while at the same time, snipers will be used for the purpose of delaying or preventing police counter-action and movement, by pinning down personnel and vehicles in preselected strategic areas. In such a riot-combat situation, there will also usually appear the "hit and run" type sniping action where individuals in cars, or small ambulatory groups, will fire a few shots at police from a concealed

position and then rapidly move on to another firing position, etc. Police can also expect to encounter the psychopathic sniper who will be "triggered off" by the violence of a riot action. This type of an individual, as in the case of the barricaded criminal, can be extremely dangerous and often is skilled in the use of firearms.

The so-called Texas sniper incident is a classic example of a deranged, skilled sniper and it has been described as the most savage one-man rampage in the history of American crime. On August 2, 1966, Charles Whitman, a mentally disturbed ex-marine, after murdering his wife and mother, killed twelve people and wounded thirty-one more, while barricaded on the campus of the University of Texas. For over an hour and a half he dominated a wide area of the campus, despite the efforts of police and volunteer civilians armed with rifles. He was finally killed by two policemen who were able to get within pistol range of his position, from inside the tower. Whitman's armament consisted of a 7M/M

magnum rifle with a 4-power scope, a .35 caliber automatic rifle, a .30 caliber carbine, a 12 gauge sawed-off shotgun, a .357 magnum revolver and a 9 M/M Luger pistol. During the long fire fight, Whitman reportedly used all of these weapons. Because he frequently changed his position and used different sounding firearms, it was initially difficult for police to determine whether one or more snipers were firing. The incident is exemplary of a combination of the two types of sniping that law enforcement officers must be prepared to combat. Whitman apparently fired indiscriminately at closer targets of opportunity, as they appeared on the campus, and also fired with deadly accuracy over long ranges, using his scope sighted rifle, etc.

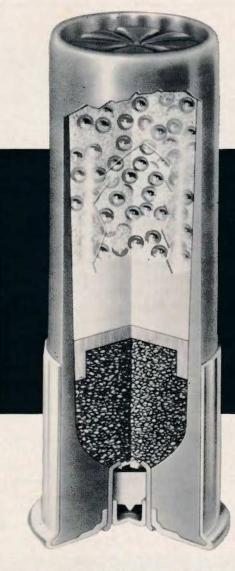
During the 1967 civil disturbance in Newark and Detroit, there was evidence of some degree of rioter-sniper organization. This became more apparent during the later stages of both riots. The Governor of New Jersey, in a published interview stated, "The snipers with their cross fire techniques and their dispersal techniques of jumping from one place to another, gave evidence of being very expert." Indiscriminate type sniper fire went on for four days before being suppressed by police and National Guardsmen. A policeman and a fireman were killed and many were wounded. Rioting in Detroit took place during the same period. There was an even greater incidence of sniping. Several police and firemen were killed by snipers and over seventy wounded.

Police intelligence in riot-prone areas where a sniper threat exists is vital. Information should be backed up by planned raids, prior to any potential riot action, on caches of weapons, training areas, and headquarters of extremist organizations that are planning this type of activity in conjunction with city insurrections.

A sniper attack that takes place (Continued on page 64)



Using a police car as a shield, officers return fire at a sniper during the second night of violence on the east side of Cleveland in July 1968.





The Winchester HD Magnum

By Wallace Labisky

Cutaway of the High Density Magnum shows plastic granules and collar.



HDM 12 gauge loads come in 1½ or 1% ounce shot charges in number 2 or 4. Pellets are pampered by shot sleeve and filler. S EVERAL YEARS AGO Winchester-Western vastly improved their buckshot loads by bedding the blue whistlers in granulated polyethylene. Ever since that eventful day a lot of shotgunners, particularly those who are hep on extreme-range pass shooting of waterfowl, have wondered why W-W didn't extend this practice, while they were at it, to the larger sizes of birdshot in magnum loadings.

These chaps need not suffer any longer, because the big red "W" outfit has just placed on the market a shotshell load that is destined to quickly become a favorite among the quacker-minded gentry. This new duck/goose/turkey-busting pill is called the High Density Magnum (HDM), and at the present time is being offered in 12gauge persuasion only. Loadings include the popular $2\frac{3}{4}$ " magnum with $1\frac{1}{2}$ ozs. of shot, and the 3" "dreadnaught" charged with $1\frac{7}{8}$ ozs. Shot sizes are limited to 2's and 4's.

Outwardly, the new HDM loads look much the same as the other W-W Mark 5 offerings. They are assembled in the compression-formed, all-plastic, solid base case having a $\frac{3}{4}$ "-high brass head, and the crimp is the usual 6-point fold closure. Inside, however, there is a big difference. Not in the powder, wadding or shot used, but in the fact that the pellets are nestled in a granulated polyethylene material that

Comparison of patterns with 1½ ounces of number 4 shot from standard and new HDM.

WIN SS MARK 5 C/F HDM 12 4cH = 212 116-172-811% 40 YDS

affords them an extra and highly important measure of protection against damage during their perilous journey through the bore of the gun.

One of the cold, hard facts of shotgunning is that the relatively soft shot pellet is highly susceptible to deformation, and once it loses its spherical form it is adversely affected to a large degree by air resistance. In other words, the damaged pellet does not fly true. It quickly strays from the shot cloud and contributes nothing to pattern performance, except at extremely close range.

Improving the pattern for long-range work obviously calls for a means of alleviating pellet damage. The now well-known Mark 5 plastic shot sleeve protects a portion of the shot charge by eliminating the abrasion resulting from pellet contact with the forcing cone and the bore. Heavy hunting loads in other brands have similar contrivances in the form of shot cups. All of these help a great deal, but this approach does nothing to prevent the deformation that occurs when the shot charge first begins to move forward within the shell. And the damage which occurs at this point, as the pellets are forcibly jammed against one another, is by far the major factor in causing patterns to rapidly thin out.

This is where the granulated polyethylene pulls its weight (Continued on page 67)

PATTERN TEST SUMMARY

SUPER-X MARK 5 C/F

80-156-73.5%

Winchester-Western 12-Gauge 23/4" Magnum Shells Gun: Browning Automatic-5, Chamber 23/4", Barrel 291/2", Choke ,026" Range: 40 Yards (Five-shot Averages)

Test	Load	Density 20" Circle	Density 30" Circle	Efficiency 30" Circle	Edv * 20" Circle	Edv * 30" Circle
1	Western Super-X Standard Mark 5 1½ x 4ch (212)	92	157	74.1%	26	13 (6.2%)
2	Win. Super-Speed High Density Magnum $1\frac{1}{2} \times 4ch$ (212)	114	172	81.0%	34	5 (2.4%)
3	Western Super-X Standard Mark 5 $1\frac{1}{2} \times 2ch$ (134)	61	97	72.7%	37	33 (24.6%)
4	Win. Super-Speed High Density Magnum 1½ x 2ch (138)	75	113	82.0%	34	7 (5.0%)

DV = Extreme density variation shows difference in number of pellet hits between high and low patterns.





Bowman with his various 6 mm rifles. From top: 660 and 700 Remington in 6 mm Rem. cal.; .240 Weatherby Mag.; .243 Win. M70; custom 6 mm Rem.

STILL IN ITS TEENS, THE 6 MM IS ALREADY NUMBER FOUR ON POPULARITY CHARTS

Q UITE RECENTLY I MADE a survey of the sales records of one of the largest ammunition manufacturers and discovered that the number one cartridge in sales in the States today is the enduring .30-30 and this means it is also the most used cartridge. It comes in standard bullet weights of 150 and 170 grains and this makes it one of the simplest and least complicated of all the center fire cartridges. It has changed very little in the 73 years of its existence and its popularity seems to increase each year.

Number two on this popularity list is the 62 year old .30-06. This one is without a doubt the most highly specialized and extensively developed cartridge today. I have just rechecked a list of loadings (bullet weights and types) for the .30-06, and find 480 in this list. I am sure a complete listing would run up into the thousands now, as the list checked is over 25 years old.

With these two cartridges being numbers one and two on the popularity list and some old favorites of nearly the same age, such as the .35 Remington, the .300 Savage and the .303 British holding the 7th, 8th, and 9th positions, it may be somewhat surprising to learn that a relatively new cartridge and caliber group, now just entering the teens, holds the 4th place on the sales, use and popularity list and is increasing its hold quite rapidly. This is the 6 mm (.243) family of cartridges and included in the count are the .243 Winchester, the .244 Remington and the 6 mm Remington that is becoming so very popular. The latest production cartridge to be added to this caliber is the new high performance .240 Weatherby Magnum.

Thirteen years ago, when Winchester announced their .243 and Remington their .244, many shooters predicted that the 6 mm would never equal the popularity of the .257 and many thought the .25.06 should have been brought out instead of these two. A great number of 6 mms in super wildcat forms appeared almost immediately, with cases up to and including the full size Holland 7 Holland.

Like a number of other gun writers I also fooled around with and investigated many of these experimental cartridges. However, all this experimenting sort of tapered off and the .243, the .244 and the 6 mm was the fully accepted standard of the 6 mm production rifles. There is very little doubt about the position of the 6 mm today. It is certainly one of the standard and basic calibers for the rifleman. This is particularly true if one is hunting game of deer and antelope size. It is also very well regarded as a predator and varmint caliber.

The 6 mm, unlike the 6.5 caliber, was comparatively unknown before 1940. Brought out first in the Navy Lee before the turn of the century it was commercially adapted by Winchester in 1898, but never became popular. Velocity was low, due to the extra long and heavy bullets that were used, and accuracy was not very good. Barrel twists of 6½ inches had to be used to stabilize the slow 112 grain bullet and barrel life with the powders available was limited. Actually, the authentic advent of the 6 mm started with Vernor Gipson and his different versions of it. However, not too much interest was aroused even then, until some of the custom bullet makers (and there weren't too many of them at that time) brought out 85, 90 and 100 grain pointed bullets. With the advent of these bullets, interest in the 6 mm increased rapidly. Wildcat versions came out on many types and sizes of cases, with the .220 Swift case being one of the best and most popular in 6 mm and called the Cobra.

J. W. Gebby was one of the first of the eastern gun experimenters to use the 6 mm, with the late Captain G. L. Wotkyns following close behind him. Gebby tried a shortened version of the H & H case, as well as many others. Most of the eastern experiments were made with light weight bullets of 70, 80 and 90 grains as the principal ani-



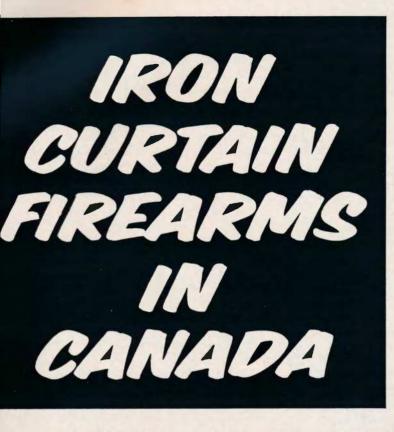
mal they would be used on was the eastern wood chuck. There were well confirmed reports of velocities being made by these wildcat 6s that equaled those made by the .220 Swift. Most of the early 6s were called .240s, although this was not a strictly accurate term as far as bore or groove diameter was concerned. Mike Walker of Remington and Lucien Cary also conducted quite a few experiments with the various 6 mms during the early 1940's.

One of the best and most popular versions of the 6 mm during this period, so far as varmint weight bullets were regarded, was one made by Homer Brown of Sun Valley, California, and called the Cobra. It was made up on a .220 Swift case. Al Barr also did quite a lot of experimenting with this one in the east.

The popularity of the 6 mm was easily established here in the west where varmints and predators, such as the jack-rabbitt, coyote and bob-cat, exist in large numbers. Also, shooters soon discovered that if they used 100 grain bullets it was an excellent caliber for animals of antelope or deer size. It proved to be a very flat shooting and accurate caliber at all practical ranges and bucked the high cross winds, so frequently encountered here in the west, far better than any of the various .224s or .228s.

The first gunsmith to specialize in the 6 mm in the southwest was P. O. Ackley, then living in Wagon Mound, New Mexico and later in Trinidad, Colorado. He contributed a great deal to the popu- (Continued on page 66)

The various 6 mms including wildcats; from left; 6x47; 6 mm lnt.; 6 mm—250; 6 mm—300 Sav.; .240 Cobra; 6 mm on belted Ackley .288 case; .243 Win.; 6 mm Rem.; 6 mm— 284; 6 mm—270; 6 mm—.06; .240 Wby.; 6 mm—.275 H & H.



By JOE CHUTE & BILL VAN ROOY

THE AMERICAN shooting clan has, in recent times, had an almost unlimited choice of imported guns to buy, from super-economy pistols all the way up to elegant sporters and drilling combination guns. However, there are many sporting arms that never see the light of day in the U.S. due to political considerations: guns from behind the Iron Curtain. Russia, Czechoslovakia, East Germany, and even Red China are burgeoning exporters of civilian arms (not to mention military) to eager shooters throughout the world. In Canada, Iron Curtain guns are competitive in price and quality, and we herein offer an evaluation of two .22's and a brand of ammo.

Twenty-two caliber rim-fire ammunition is one of the wonders of modern mass production. Even in standard grades it achieves amazing levels of uniformity and performance and is generally taken for granted. A shooter may logically expect one brand or lot to give him superior accuracy in a particular rifle or hand gun, but he expects all brands to perform creditably, and they do. R.W.S., C.I.L., Remington, and Winchester produce "second to none" rim-fire ammunition, but what about cartridges from outside America? For example, does Russian R.F. ammunition meet our standards for reliability?

We had an opportunity to examine and test one grade of .22 Long Rifle fodder from the Soviet Union and found the answer contradictory. Hunter PE 1—the importer's listing for this ammunition—works well in Russian rifles but not at all in some others from Germany, Czechoslovakia, and Belgium. Why?

The ammo comes 50 rounds to a box, 112 boxes to a case, and retails for 79ϕ per box in British Columbia, where we bought our test lot of ammunition. Boxes are printed in Russian (red and black on white naturally) and are partitioned—a nice touch.

It is the appearance of the cartridges themselves that

IRON CURTAIN GUNS ARE SELDOM USED IN THE U.S., BUT IN CANADA THEY ARE COMPETITIVE IN PRICE AND QUALITY



gave us a start. They look like springtime pick-ups at the range. Black! No shiny brass or nickel plate for this round —the case is steel. And, like center-fire steel cases, it has a dark, rough appearance.

A quick going-over with a micrometer proved no significant variation from standard North American dimensions. The head is plain, without stamp markings, and is domed. A heavy wasp-waisted crimp holds the bullet, which is conventional in design and lubricated with heavy grease.

We began firing the Russian fodder from T0Z8 target rifles, the standard beginner's rifles in the Soviet Union. No trouble was expected, nor did any occur. The PE 1 rounds grouped as well as the Canadian brand we normally fired from the rifles.

The story changed when we switched rifles and began using an ancient Mauser which possesses a weak striker spring. Misfires occurred about 50 per cent of the time. This was not too surprising as we had expected a steel case to be harder to dent than brass. Next we put the ammunition into a T-bolt Browning, and it would not come out! The extractors slipped over the rim, leaving the black case in the chamber. Again, not too surprising as the T-bolt has no twisting preliminary extraction and steel does not have the same elastic return as brass and retains a closer fit to the chamber walls after firing. The cases came out smoothly with a rod, so no chamber roughness caused the hangup.

Before the end of our investigation we had fired the Russian ammunition in a dozen different rifles. We reached the following conclusions:

The Russian ammo functions very well in Russian rifles



Above: The steel case on the right exhibits a peculiar crimp when compared with standard North American brass case. Right: A box of 50 steel cased .22 L.R. Russian cartridges. Left: The Czech-made Brno Mod. 581 automatic.

GUNS . DECEMBER 1968

and other makes with strong strikers, giving satisfactory accuracy and positive function. However, weapons without primary extraction and positive ignition will have trouble with stuck cases and failure to ignite.

It is a significant technical advance to produce steel cases of .22 rim-fire type. A slightly softer alloy would undoubtedly facilitate ignition but might spoil elasticity. Unless there is a marked scarcity of copper alloy it is doubtful if steel will replace brass in North American rim-fire ammunition.

Rifles and shotguns made by Brno in Czechoslovakia have always had ready acceptance in Canada. Two rifles in particular are highly regarded—a light weight sporter (ZG47) built on the Mod. 98 Mauser action, often with double set triggers and commonly of 7 x 57 mm caliber, the other in .22 Hornet (SKM465) with a miniature Mauser action.

Czech rifles are noted for superb machining and painstaking finish; materials are above reproach. The Mod. 581 is a post war design and incorporates some modern fabrication in the trigger group; however, the majority of parts are machined from forgings and bar stock.

The disconnector reminds the writers of the one used in the Bren machine gun, a Brno design. The short action offers one disadvantage for shooters firing from the left shoulder, as the ejection port is close to the right eye and gas sprays the shooter's face. No trouble is encountered firing right-handed.

Checkering is below standard on our test rifle, the diamonds not brought up to point. In any case it is an improvement over any impressed so-called checkering. In summation, the rifle features compact design, quick take down, and solid workmanship.

Early training in the safe, efficient use of firearms is vital in a locality where hunting is a popular sport and rifles and shotguns are available in almost every home. In our own village of Lytton, British Columbia, the Lions sponsor a training program in the local elementary school, supplying air guns, targets, awards, etc. The program is conducted by the principal, and the seventh grade boys and girls eagerly participate in 15 ft. firing during the lunch hour. The local Rod and Gun Club was anxious to continue the training program into the high school age level and managed to raise \$170 toward the purchase of .22 rifles. How to stretch \$170 to purchase six rifles proved a sticky problem, requiring considerable thought as to what exactly our proposed program should do and *(Continued on page 69)*



Iron frame Henry rifle, 1860 style.

THE HENRY RIFLE Regular brass framed Henry repeater.



By JOHN CRAIG ANDREWS

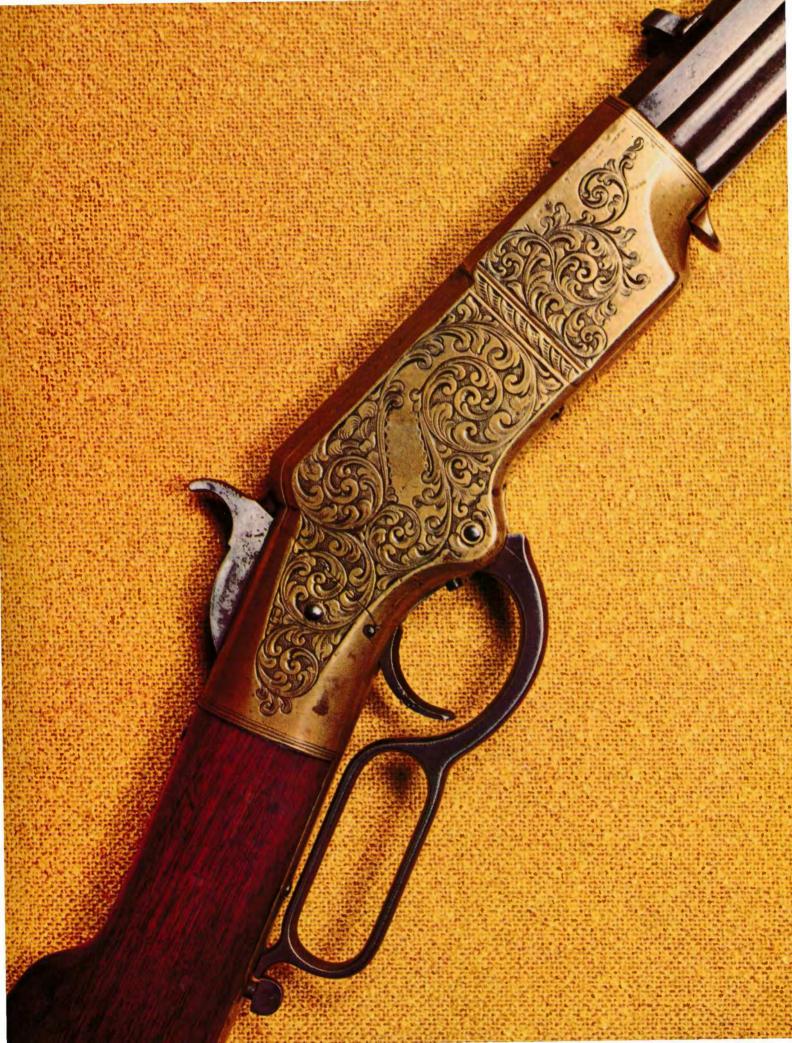
Benjamin Tyler Henry.

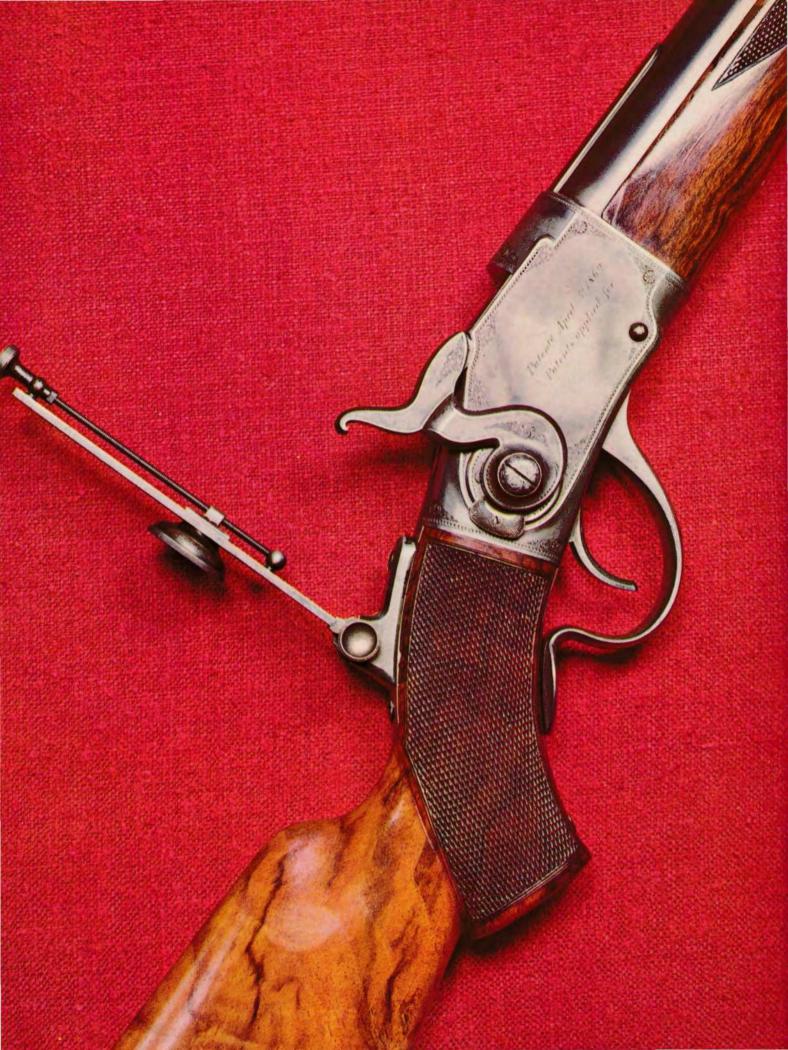
HABERDASHER OLIVER FISHER WINCHESTER made a big year for himself out of 1866. He forsook his shirtmaking interests, forged the fame-destined Winchester Repeating Arms Company, and put his own name on a revolutionary new rifle. From that crucial year on, good fortune followed easily. But what went before? Winchester's "yellow boy" had not appeared full-grown overnight, but was the offspring of the union of Benjamin Tyler Henry's genius and the floundering Volcanic repeating firearms. The Volcanic family of magazine repeaters had been around since 1854. Six versions had been produced with engraved steel frames by a pilot Smith & Wesson pistol company in Norwich, Connecticut. A year later, Horace Smith, Daniel B. Wesson, Courtlandt C. Palmer, Oliver F. Winchester and other backers incorporated the Volcanic Repeating Arms Company down the pike at New Haven. Even though the name had a nice ring to it, it was not enough to turn the tide against *(Continued on page 56)*

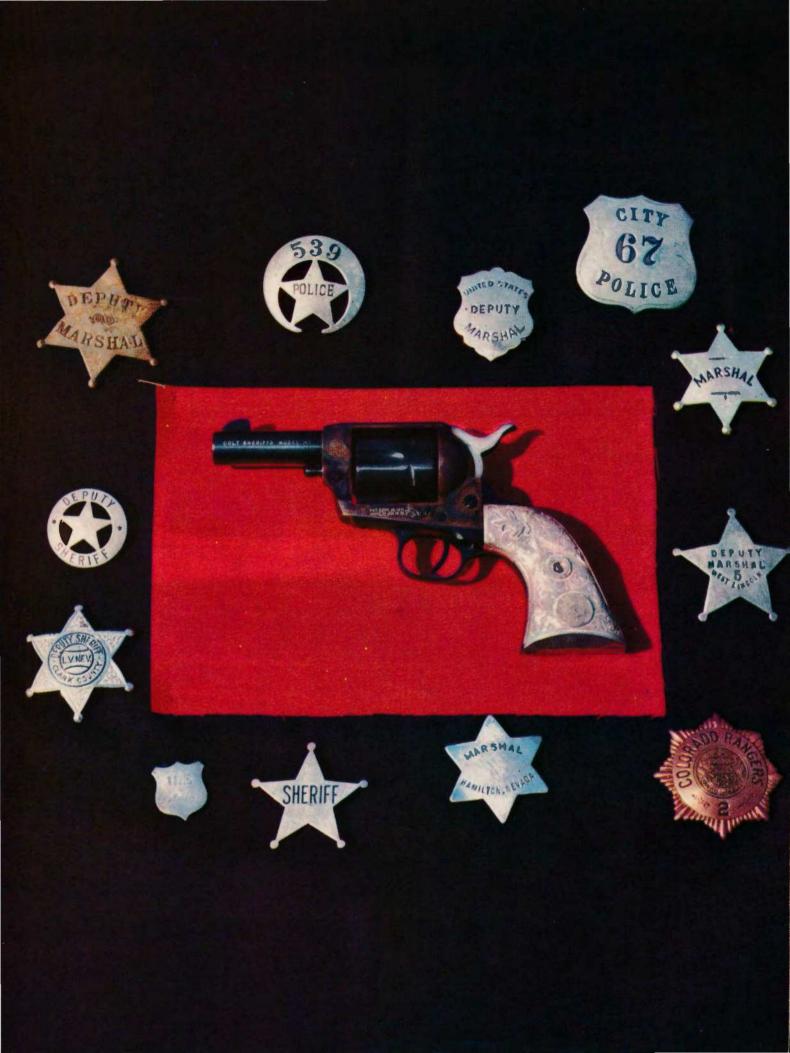
Guns Color Gallery

In response to reader requests, Guns Magazine presents, on the following five pages, color photographs, without type, suitable for framing. On the facing page we have reproduced this month's cover; a Henry Rifle, photographed by Dr. R. L. Moore. Next is another Dr. Moore photo, a rare Sharps Model 1875 Long Range rifle. On page 39 is one of the most popular covers we have ever published—there must be a lot of Western buffs among our readers; this is a Sheriff's Model Colt Single Action surrounded by historic lawman badges; photo by George Virgines. On page 40 is the rare Luger Carbine from our March, 1967 cover; photo by Robert Hughs. The beautifully inlaid Colt Single Action on page 41 came from our January, 1968 issue, and was photographed by Claude V. Cornwell, Jr.

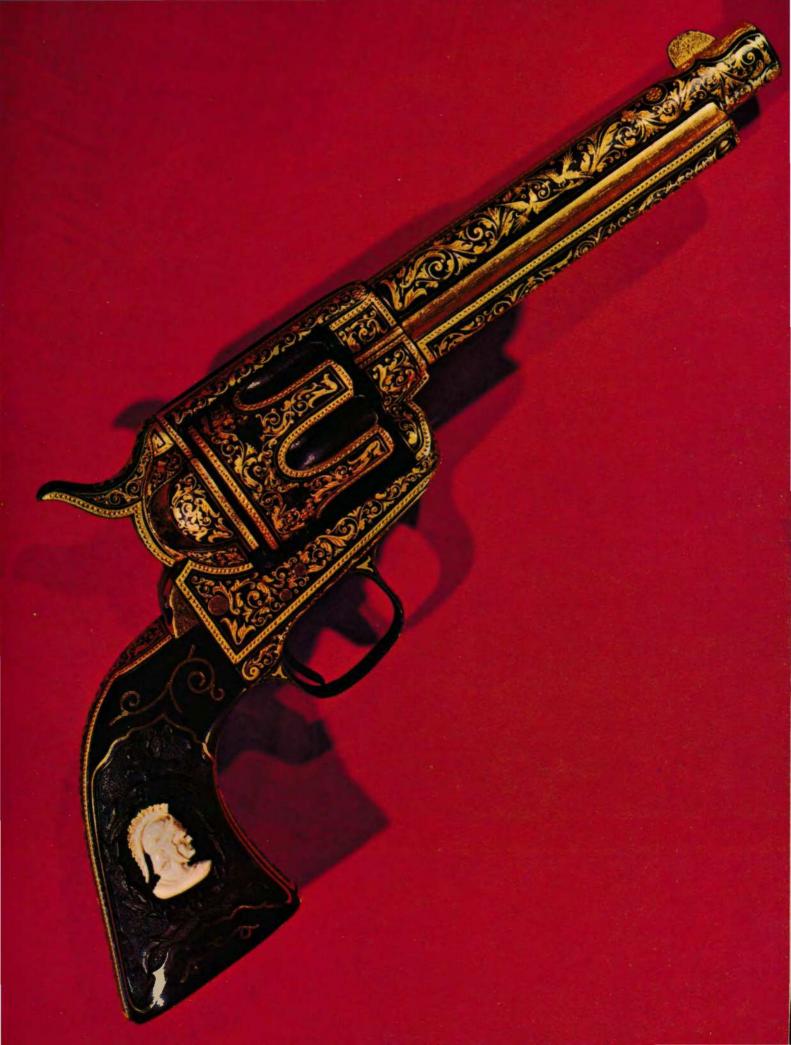
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Five Savage models have sold over a million each. Our Savage 110 center fire, pictured left, may be the sixth. It's *the* really new idea in a high-power bolt action rifle.

high-power bolt action rifle. Some proof: Savage doesn't build the headspace into the 110; Savage builds the 110 around the headspace.

We didn't want the 110 to suffer traditional "plus-or-minus" tolerances that critically affect bolt action accuracy.

So Savage pioneered a unique assembly method that places the barrel into the receiver *exactly* where we want it. It gives us the most precise headspace possible. And, with our free-floating barrel, the sweetest kind of accuracy.

Next we tailored the action to fit the cartridge. A long action for long cartridges, a short action for short cartridges. That's why 110 feed is faster and more dependable, strength is greater, and appearance better. About the 110's adjustable trigger. One of our big bore benchrest shooters designed it for consistent pull and crisp let off. Enough said.

But 110 quality goes a lot further than smoothness and accuracy. The recessed bolt face completely covers the cartridge head. Two massive lugs lock the bolt into the solid-steel receiver. The chamber is surrounded by a separate ring of steel. Result: a double wall of safety, the dream of every shooter.

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Prices subject to change. Slightly higher in Canada Savage and the Indian head are trademarks of Savage Arms, Westfield, Mass. 01085. Div. of Emhart Corporation. Reg. U.S. Pat. Off. Marca Registrada.





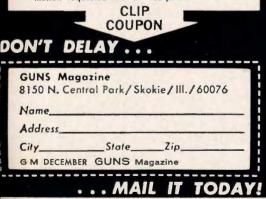
NOTHING TO BUY, NO ENTRY FEE!

Simply clip and mail the coupon below and you will be eligible for the "Gun of the Month"—the Schultz and Larsen Model 68 DL. Rifles by Schultz and Larsen have long been known for their good looks, precision craftsmanship and exceptional occuracy. This boltaction beauty features four locking lugs and a French Walnut stock with Monte Carlo comb and cheekpiece. If you demand perfection, see the Schultz and Larsen Model 68. A Redfield 4X rifle-scope, noted for accuracy and dependability, completes the package.

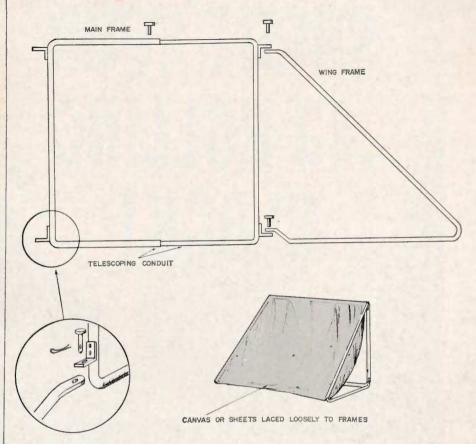
For additional information on the Schultz and Larsen line of firearms write: R. C. Fessler & Co. / 1634 Colorado Blvd. / Los Angeles, Cal. 90041

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All you do ta enter is fill in the information on the coupon below and attach it to a post-card —or simply put the information requested on a plain post-card—and return to GUNS Magazine. DO NOT MAIL ANY ENTRY IN ENVE-LOPE. Yaur nome will be entered for the drawing to be held on December 10th. The winner of the Schultz & Larsen Model 68 and scope will be notified by mail and announced in the March, 1969 issue of GUNS Magazine. And, to enter, it is not necessary to use the coupon below. A plain post-card conveying the information requested will be accepted.



CATCH THOSE CASES



How many times have you gone out to that improvised range with one or more of your pet autoloaders and promptly lost at least a third of your brass? There's no easy way to recover every tossed out case, even on a clean, hard-surface firing point. Even closely-mown grass hides them gleefully, making you spend more time case-hunting than shooting-and even then you're lucky to recover 8 out of 10. Worst of all are bare dirt or sandy ranges where nothing less than a thorough washing will make fired cases fit to reload. And, if it is or has been raining, oh, woe is me! Mud and crud on every case.

I got fed up with this years ago and started carrying a $8' \times 8'$ canvas ground sheet to the range to catch those cases I wanted to save. It helped, but even 64 square feet wasn't enough area to catch them all, and plenty of cases bounced or rolled off to camouflage themselves perfectly. Even when carefully used, the sheet only gave me about 90% brass recovery.

One day I was shooting an experimental military semi-automatic rifle near a large range instruction sign. After a few full magazines had been run off rapid-fire, I noticed nearly all the ejected cases had hit the sign and fallen into a neat window at its base. Voila! The solution.

Promptly, a hinged frame was cobbled together from electrical conduit liberated from a salvage pile. Several pieces were spliced together and bent into a telescoping, six-foot open square. Scrap sheet metal was bent to form hinge points and attached as shown with sheet-metal screws. Two triangular wing frames were made up about the same way and pivoted on the square with stove bolts. The whole assembly was then covered loosely with light-weight scrap canvas (several old sheets would do as well).

Opened up to form a funnel-like trap and properly positioned to cover the ejection pattern of the gun being fired, this gadget catches virtually every case and piles them neatly on the canvas. The cloth, being quite slack, doesn't even bounce the empties. They simply hit, then roll downward where they're caught in the belly at the bottom of the canvas.

The photos and drawings show how simple this gadget is to make. If you live where breezes are lively enough to shove it around, just keep a couple or three sandbags or rocks to anchor it. If a permanent setup is wanted, some heavy wire anchors driven into the ground will do the job even better.—Maj. George C. Nonte

SHOOT YOUR 43 ROLLING BLOCK!

By RICHARD P. MILLER Photos by Janet Ann Miller

By breech-seating the bullet and then loading the case, accuracy can be enhanced.

SEVERAL YEARS AGO, the generalissimos of the Argentine Army decided to part with their last batch of Remington rolling-block rifles in .43 Spanish caliber, which had been languishing in storage since the turn of the century.

For some reason, they kept the best until last. This consignment—retailed in the United States through various outlets of Interarmco—was rated NRA Excellent, and was snapped up by American single-shot buffs in a matter of weeks. A few carbines in the same caliber also trickled through, and disappeared into collections even faster.

Immediately, the thousands of happy Norteamericanos who danced home from the Railway Express office with their "rollers" faced two questions: whether to hang their prizes on the wall as choice collector's items, or take them out on the range where they belong, and, if the latter case, where to find a source of shootin' ammo.

To answer the second query first, you can buy .43 Spanish cartridges at any self-respecting gun show—say, 50 or 100 without going totally broke. If you're lucky, you might find a dealer with some Connecticut Cartridge Co. brass, newly made, that takes boxer primers. But you've got to reload the stuff, regardless. Not even J. Paul Getty can buy .43 Spanish by the case and throw away the once-fired brass. More important, the original U.M.C. cartridges are generally armed with mercuric primers, and their vapors play hob with the brass of the case. You *can* reload with black powder after firing mercurics, but not for very long. And, using smokeless powder is downright harebrained.

Your best bet (since the old loads give spotty performance after decades in storage), is to buy the cartridges, pull the bullets, dump the powder, deprime them and start from scratch. No problem until you come to the depriming. You don't fool around a live Berdan primer with a bradawl, and poking 'em out from the inside is just about as ticklish. Instead of one centered flash-hole there are two tiny perforations, one on each side of the anvil built into the case.

But with one spare evening in the basement, and a little Yanqui ingenuity, you can make a couple of simple gadgets that'll do the whole job for you. The first is a hydraulic deprimer and the second is a strap-hinge primer inserter—that works! Best of all, the same procedure will work for any round that takes the big Berdan rifle primer, where more orthodox equipment isn't available.

There's a hitch: you'll need one dead case, even if it means firing one off to get it. (Be sure to swab out afterward —most of those old primers are corrosive.) Other ingredients needed are: ladleful of melted lead; empty frozen orange-juice can; wood or metal dowel about 6" long and a hair smaller than the inside case-neck diameter; bucket of water; 6-inch (each side) metal door-hinge; and head of a common nail, filed smooth.

Grease your dead case and set the can on your workbench with the case inside it, mouth up. Hold the case firm with a pencil, and pour lead all around it, up to the edge of the neck. Let the whole works cool, strip away the can and tap the case out the bottom of the mould. There's your hydraulic depriming die.

Put a case in the die, which will hold it pretty snugly. Fill the case about two-thirds full of water and insert the dowel. Hold everything over the bucket and tap the dowel with a hammer. Out pops the mercuric primer.

Now take the hinge and cut a hole in one arm of it, centered about an inch from the joint. File the hole to size, so a case will slip through up to the rim. On the opposite arm, where the priming hole comes (see illustration), solder the nail head, to press the new primer firmly into the pocket. There's your priming device.

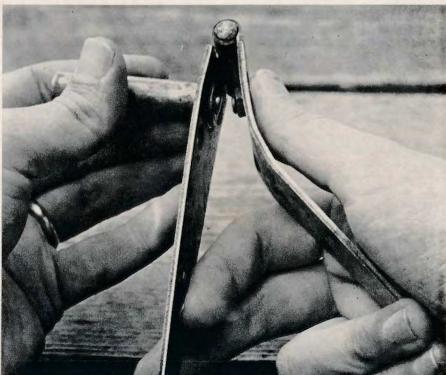
As to powder, you can go any of three routes—all black, all smokeless, or duplex. Any standard reloader's guide lists pet loads to start playing with.

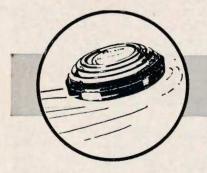
Of course, you also have a choice about how you load the rifle itself. For convenience, most shooters prefer to take fully made-up cartridges to the range. But you can powder and wad your cases, then breech-seat each bullet and put the loaded case in after it, *schuetzen*-style. The latter method eliminates one variable—the grip of the case neck on the bullet—and usually produces higher scores.

Now to get back to the first question, whether or not to let your Remington rolling-block gather dust on the wall. Holy Eliphalet, no! Take it to the range, stand up on your hind legs and shoot. The results, with revamped loads and that long, long barrel, will be something for you to yarn about on cold winter evenings.

The tincan die holds shell for foolproof hydraulic depriming. Below, the Poorman's Primer Pusher does a quick job on the big obsolete militaries.







PULL!

By DICK MILLER

THE AVERAGE SHOTGUN shooting enthusiast figures that anybody who can break two hundred and fifty flying clay targets without a miss is a cracking good shot!

If eighteen-year-old Jay Gerlick of West Des Moines, Iowa sniffs a little disdainfully at this conclusion, it's not the generation gap that's bothering him. Young Gerlich broke eight hundred and twenty one consecutive targets in the 1968 NSSA World Championships at the Kansas City Skeet Club, and didn't even get a piece of the championship!

Talk about your asterisks in the all-time home run record book. All Jay has for his effort is a notation that he was among the twenty-five contestants in the 1968 championships who broke 250 straight 12-gauge targets, then a notation that in the ensuing shoot-off, he broke 574 of 575 extra targets.

The winners of the 1968 marathon are co-champions Al Buntrock and Tom Heffron, Jr. After each had broken eight hundred extra targets, after deadlocking in the regulation 250 bird event, they decided that this had gone far enough, and asked that NSSA declare them co-champions, which was done.

Otherwise, we might not have had a 1968 champion in 1968. Heffron and Buntrock might have still been blazing away into the early hours of 1969. There was other consistency in the 1968 NSSA championships. Jim Bellows added a third All-Around Championship, giving him the trophy for 1965, 1967, and 1968. His 547x550 was one target better than his winning effort at Savannah last year, but one target shy of a new mark for the event.

Industry gunner Barney Hartmann, late of amateur ranks, equalled the 547 mark, while runner-up Ken Barnes and third place Steve Hanzel were one target off the pace at 546x550.

Carl Poston from Chattanooga, Tennessee, was crowned the 1968 .410 champion, also via the shoot-off route, with a 98x100 in regulation distance.

Young Jay Gerlich did have a measure of consolation in this event, by taking the Class A trophy.

Just so that it would be a legitimate and normal dog-bites-man skeet nationals, Alex Kerr won a trophy here, the AA .410 hardware. Lackland AFB's Cecil Tramell continued his winning ways with the 28 gauge trophy, decided like all the other 1968 major trophies, via the extra-stanza method.

Hoosier Mike Martin from South Bend prevailed in twenty-gauge competition by turning back challenges from a lot of other hopefuls who also failed to miss during the first hundred targets.

The husband-wife shooting team of John and Sallie Durbin will always remember 1968 at Kansas City, or, perhaps it would be better said that Kansas City and the Nationals will always remember John and Sallie. They won every husband and wife event except 28 gauge, and racked up 1072 targets in the winning High-All-Around event. Sallie dropped only one target in 12 gauge, giving her 249x250 and paired with John's perfect 250, a 499x500 in the husband-wife combined event. Sallie added to her combined laurels by taking runner-up to Julia Armour for High Lady in the four gauges.

Steve Pakis from Hot Springs, Arkansas was hot in the junior division for high-all-around, with 541, edging Chuck Mayhew from Dallas, Texas by a single break.

Lackland AFB prevailed over the Army in International Skeet, when Lackland's John Satterwhite turned back a frontal assault from Tom Gillmore of Ft. Benning. The air force team of Satterwhite, Rowden, Thinglum, Herring, and Tramell annexed the team International trophy as well.

Hoosier hot shots did some hot shooting in hot weather at the state championships of trapshooting hosted by Evansville-Winchester Gun Club. Until the Hoosier trap tournament, only fifty-five shooters have broken 100 straight in doubles, during 45 years of official record keeping. When the smoke had cleared at Evansville, three shooters had accomplished the feat in a single week.

Doug Bedwell of Brazil, Indiana broke fifty pairs on a Thursday, to become only the second junior in the history of trap to go clean on the doubles.

On the next day, Morris Stinebring of Thawville, Illinois cracked all the doubles which gave him the uncontested non-resident trophy. On the same day, transplanted Californian Jim Hunter, an industry shooter now working out of Fort Wayne, Indiana, garnered the industry trophy also with the elusive hundred straight. Hunter will be remembered as the youngest 27-yard handicapper in the game a few years back.

Young Bedwell, a 17-year-old like Jay Gerlich from the skeet ranks mentioned earlier, followed his perfect score in doubles with a 99 the next day, which put him in a shootoff with the new Mr. Doubles himself, Edgar Kuhenschmidt, but lost the trophy here when he dropped one target in the extra ten pairs while Kuhlenschmidt went clean. The Hoosier state shoot is no stranger to long shoot-offs, which I can well remember from my own Hoosier days.

OWEN SENFF FROM Napanee and Jim Bowers of Union City locked horns in a grueling extra session for the 16-yard trophy. Bowers ran 550 extra birds without a miss to take the trophy when Senff bobbled a single rock. Melvin Wolf from Arlington ground out an extra 25 straight to take the Hoosier handicap title after deadlocking with Victor Putz of Mishawaka at 99.

Doug Bedwell racked up a 98 for the junior trophy, which also left him with only seven missed targets from the week's total of 900. Another highlight in the 1968 Hoosier trap set-to was a distaff victory over the field in Thursday's preliminary handicap. when Sharon Kingen of the shooting Kingens of McCordsville broke 99 for the trophy. The Ladies trophy for the same day went to Kitty Snellenberger of Angola for her 92 thus insuring that the name of Snellenberger continues to be a big one in Indiana trap annals.

My long-time friends and fellow gun fanciers Leah and Howard Jenkins from Indianapolis took the husband-wife trophy in the 16-yard championship when each fired a non-controversial 98x100. It's better when Mom and Pop shoot identical scores.

Another of my former business associates from Hoosier days, Jack Waters, the affable New Albany flash, took the Class A doubles trophy with his 98, one shy of the 99 that deadlocked Doug Bedwell and Edgar Kuhlenschmidt.

Also in the nostalgic vein, when Doug Bedwell fired his perfect hundred in doubles to win Class A for that day's events the Class B winner with a 94 was none other than my old friend Homer Orell from Crown Point, Indiana, which brought back pleasant memories of the four years I spent in Crown Point.

It was also good to see such trophy winners as Roman Hochsegang and Kelly Armstrong from Jasper, with whom I've fired many a target. It was good to see that the Grayville, Illinois veterinarian, Dr. L. G. Chalcraft goes on and on with a victory in the senior handicap division. How are all the patients, Doc?

Howard Kaster, besides making an ecumenical visit to Reno for the purpose of winning a couple of trapshoots, has stepped up the tempo of trapshooting at the Sahara Gun Club in Las Vegas, Nevada, Kaster announces that lighted traps and clubhouse remodeling are planned, and that weekly "ham and turkey" shoots have been added to the Sahara program of events so that shooters may gain additional competitive experience. More registered dates are being added by the Sahara club, which will be the site of the 1969 Nevada state tournament, and also host the great Sahara Mid-Winter Trapshoot in February.

Mrs. Sylvia Campbell, one of the Sahara regulars was recently honored when Sports Illustrated exec Keith Morris presented her with a handsome trophy for her trapshooting expertise.

In additon to the skeet gunners representing the United States in the Olympics at Mexico City, as reported in these pages last month, the United States trap representatives are Army Sp4 Larry Stafford from Denver, Colorado and Air Force Sgt. Tom Garrigus of Hillsboro, Oregon.

An exciting shoot-off featured the trap selections as well as skeet elimination. Stafford was in 4th place until the last day of the three-day event, then surged to the victory. Garrigus had to break fifty straight to gain the #2 spot over Sp4 Mike Cleary of Flint, Michigan. Well known gunner Army Capt. Gordon Horner of San Francisco is the other trap alternate.





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RELOADING FOR VELOCITY

(Continued from page 21)

himself that this hot-shot load is just bound to decimate the varmint population. So, he proceeds to load up 50 or 100 rounds and hie himself off to the range. There he will find out that the load makes a helluva noise, gets the bullet down range faster than anything he has tried, and may very well keep all shots in a four- or fiveinch group at 100 yards.

At this point, he is first perplexed because a published recommended load simply *ought* to shoot better than that. Having used only 10 or 20 rounds to find out the load isn't up to expectations, he is now stuck with a whole sack full of unsatisfactory cartridges.

Our here has wasted time, effort, components, and money in choosing as his initial goal *high velocity* instead of *high performance*.

Now, at this stage of the game, he can spend days and quite a bit of money changing powders, bullets, and primers at this same velocity/pressure level.

Many people do this, and with a reasonable degree of frequency a real hot load may eventually be found which will shoot a c c e pt a bly well. However, the odds are certainly no better than even that after trying a half-dozen different powders and an equal number of bullets, primers, and seating depths, our handloader will awaken to the fact that he simply is not going to get the desired degree of accuracy. When this happens, a lot of high velocity fans simply give up in disgust. By pursuing velocity, they've completely missed accuracy.

All of this can be avoided if one simply doesn't consider maximum velocity the criterion of a good load. To start at the top and work only within a very narrow margin is to go at the entire job bassackwards. The logical approach, and one which will save much time, effort, frustration, and profanity is simply to start 5% to 10% below the maximum powder charge weight shown in loading data tables. Granted, this won't produce a quite maximum velocity but I have yet to see a cleaner kill or a tighter group result from an additional 100 or 200 fps.

Yet, that same amount of velocity can make a great deal of difference in accuracy and pressure, resulting in considerably less stress and strain on rifle, case, and shooter. Checking loading data, we find that in contrast to the load mentioned above, 62 grains of powder produce roughly 100 fps less, and 60 grains about 240 fps less. In my own guns, I have found that almost invariably a charge two to three grains below the published maximum will produce significantly better accuracy. Yet, though velocity is less, I can detect absolutely no difference in bullet performance on varmints, the expansion being fully as explosive at the lower velocity. Neither can I detect any difference in wind drift or drop. Consequently, there seems to be absolutely no valid excuse for insisting on maximum velocity. As often as not to do so results not in an improvement but in a deterioration of the performance factors that really count. What you really do when loading primarily for velocity is to handicap both the gun and the cartridges.

Lots of other areas of difficulty, or at least frustration, crop up as one goes along in the handloading game. And, as already indicated, moderation is far preferable to either of the extremes that suggest themselves. Extreme solutions do have their usefulness, but not really very often.

Take a look at bullets. Many handloaders seem to feel that big game demands the heaviest available in a given caliber, varmints the lightest. Tain't necessarily so. Using the .30-06 as an example, we find that a lot of people insist on loading the 220-grain round nose bullet for anything larger than deer. This automatically places two handicaps on the shooter. First, the trajectory of this bullet, at velocities it may be reasonably given, is high enough to make hitting difficult at the longer ranges. And secondly, the bullet is designed for deep penetration in heavy muscle and bone of the largest animals so often will not expand unless carefully placed high in the shoulder of something the size of an elk. On a lung shot, it will simply bore its small hole right on through. And, on lighter animals you might encounter with it in your rifle, expansion may be nil, no matter where you hit them. This means simply by using a bullet suitable for only one or two ideal shots that might be presented, you're handicapping yourself on the others more likely to come up. The bullet doesn't have to be big just because the game is. The 220-grain bullet is a specialized item at its best for only one or two occasions that won't actually occur nearly as often as others where this bullet is actually at its worst. The heaviest available bullet in any caliber actually has very limited usefulness on this continent.

A 180-grain pointed bullet of proper construction is far more versatile in the '06. It will shoot flatter and faster, expand better on medium game, simplify hitting, and yet, still be entirely adequate for the largest game. The same reasoning may be applied to any cartridge. A medium-weight pointed bullet is normally far more versatile and useful than the heaviest. Select the bullet for what it can do, not simply for its size and weight.

Then, there's the fellow who goes for the lightest bullet available for his particular brand of varmint shooting. In .30 caliber, 100- and 110-grain bullets can be had. They can be driven quite fast at reasonable pressures and produce spectacular kills when they hit. Note that "when they hit" phrase. Even at 3300 fps, such bullets shed velocity faster and drop more than heavier designs. For example, when loaded to the same pressure levels, the 130-grain bullet will be traveling faster at 200 yards than the 100 grain, and at 300 yards will be overtaking the 110-grain load. Yet, the heavier bullet produces kills just as explosive as the light ones. It is also less effected by wind. And, in my experience, requires less load development to produce maximum accuracy.

Here, again, moderation in your choice of bullet weight—as in velocity —will normally produce more consistently better results where they count, on the target. Very impressive paper performance figures can be demonstrated by extreme combinations, but the target isn't impressed by lines of data nearly so much as it is by a bullet that actually hits.

A perennial handloader's problem is powder choice. Today, one can look through a half-dozen sources of loading data and find no less than 10 to 15 powders listed for the same bullet weight in the same cartridge. The fellow who's just feeling his way along, gathering knowledge and experience as he probes deeper into handloading, can certainly be forgiven a severe case of confusion when confronted by this situation.

The tendency of loading manual publishers is to recommend loads for as wide a variety of powders as possible, even though not all are ideally suited to the cartridge/bullet combination. Naturally, all makes are usually included and this alone can account for a half-dozen different powders applied to a single bullet weight.

So, unless a few basic rules are followed, powder is likely to be selected in pretty much of a hit-or-miss fashion. This is particularly true where surplus and economy-priced powders appeal to one's money-saving instinct. I've seen many people try to use totally unsuitable powders—like 4831 in the .44 Magnum—simply because of low price.

Certainly none of the powders recommended in loading manuals are unsafe for the use shown, but it's rather easy to pick one that isn't really the best. Most manuals list several powders of varying burning rates. Usually, the slowest and the fastest burning powders listed are less efficient than those ranking in between. Those right in the middle normally produce the most favorable pressure/velocity ratio and are therefore the most efficient in that particular case/bullet combination. The best basic rule to follow is to pick one of these "middle" powders.

The loading data won't include a burning rate for each powder, but this isn't particularly difficult to determine. Normally, the data will show a given weight bullet at approximately the same velocity when driven by different powders. The powder which requires the largest charge to produce this velocity burns slowest of the lot, the one requiring the smallest burns fastest. The others rank in between, in order of the charge required.

Knowing this, then, it's easy to pick a middle range powder that will usually give better results than one selected at random or after consulting the Zodiac and peering into the entrails of a white rooster killed in the dark of the moon. There isn't just a single powder, or a single make, that is best for a given combination. Two or three, sometimes more, will be found that will work very well from a pressure, velocity, and accuracy standpoint. Once they are identified, it's a matter of trying test loads with each to determine which your particular gun prefers.

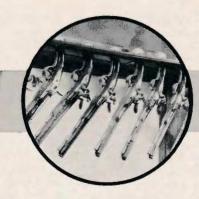
Some handloaders feel that since magnum primers have proven superior for some loads they are just naturally better for everything. Another common pitfall. Don't jump at magnum primers as a cure-all for any real or imagined problems you might have. Magnum primers are a decided advantage in high-density loads of slow burning powders with heavy bullets. With average loads in most calibers they aren't at all necessary—and there are some who even feel their use might be disadvantageous with moderate loads of medium- to fast-burning powders.

In the final analysis, moderation in loading and in your selection of components will save you time, effort, and money in achieving the ultimate goals of handloading—a correctly performing bullet placed precisely on target. The extremes will only produce headaches.



Austin





GUN RACK

Conetrol Scope Mounts

The Conetrol scope mount is now offered in a more economically priced version. This is called the "Huntur" line and features a new base which does not have the streamlined and contoured edges of the more expen-sive "Custum" model. The budgettype mount can be had either as a bridge mount or as a two-piece. The Huntur will provide windage adjustment, it will handle either the Conetrol split or solid rings, has a nongleam finish, called by George Miller. who makes the mount, "satin finish", and can be had with three heights of rings. These are %2", 11/22" and 13/32" above the rifle receiver. Conetrol is made at Seguin, Texas. I placed the new Huntur base with the Conetrol rings, one split and the other solid, on a .458 elephant rifle. This was in preparation for an African safari. The mount and rings took the recoil without any tendency of the scope to slip forward under recoil. The Conetrol mount is a good one and the addition of this less expensive base will further poplarize it.-Col. Charles Askins

Fajen Gunstock Catalog

The new Fajen gunstock catalog is completely done in color. This is a mouth-watering edition, I'll tell you! The cover is a Krieghoff over/under shotgun stocked by Fajen. The stock is "AAA" fancy grade irregular stump walnut, handsomely checkered and carved. The back cover includes six rifles, stocked with finest wood, all beautifully checkered and some also carved. These covers are worth the

one buck asked for this catalog. It is No. 69.

Reinhart Fajen is the largest manufacturer of gunstocks in the country. He makes, annually, about 100,000 stocks. These for the most part are 100% finished and 90% inletted. There is a small business in completely finished and fitted stocks. These for the most part, are made up in fancy grade selected wood and may be carved as well as checkered. Fajen had an order recently for a large number of Model



Fajen with downed Indian nilgai.

12 Winchester shotgun stocks. The factory no longer found it profitable to make up replacement stocks for this obsolescent shotgun. They asked Fajen to do it.

The latest catalog, besides all the entrancing stock wood shown in full color, has a lot of fascinating reading about it. Fajen explains how he beds the action to his stock. This is done by carving a V-block at the forend tip. The barrel rests in this V with a pressure of approximately 6 pounds. The barrel does not bind or touch the barrel channel at any other point. When stocking magnum rifles, Fajen explains that in the recoil shoulder recess he lines this with Accra fiberglass. He feels this is better than put-

> GUNS . DECEMBER 1968

ting in a crossbolt. For as he explains, "The glass won't come loose as a bolt might if the wood shrinks a little with time."

Of the many styles and types of Fajen stocks. I like best the laminated kind. He makes these stocks of alternate lavers of walnut and walnut, or walnut and maple, or maple and maple, maple and cherry, or other woods. Each lamination is glued to the next at 90 degrees to the grain of the other. The thickness varies. Typical is the walnut and maple, which has sheets of walnut 1/28" in thickness and maple of 1/16-inch. A laminated stock is absolutely impervious to the elements. It will not warp, swell, split or change its contours. For an entirely stable stock it is best.

Besides selling stocks in every degree of finish, Fajen also offers all the accessories. That is forend tips, pistol grip caps, buttplates, muzzle caps, slings, sling swivels, checkering and wood working tools, stock finishes, and gun cabinets. This catalog is one of those must items for the lover of beautiful stock wood and for a looksee at the finished article as done by one of the masters—Col. Charles Askins

Lin-Speed Oil

George Brothers makes "Lin-Speed", this is a stock finish and a right good one it is! Lin-Speed isn't very mysterious, it is a kettle-boiled linseed oil that has been refined to the ultimate. The oil gains its valuable attributes from its refinement by which all the non-drying linseed parts, called foots, are removed. If the finish is properly applied and there isn't anything difficult about that, the final wood finish, which will be a genuine oil finish, will have no equal. Both a handsome appearance and durable protection will be assured.

George Brothers who operates out of Great Barrington, Mass. has just written a handy little booklet of 32 pages in which he explains with text and photo how to prepare the stock for his Lin-Speed and how then to apply it. The explanations are clear, concise and descriptive. The illustrations are equally helpful. As Brothers explains in his opening paragraph, "If the reader will refrain from doing things not mentioned in this booklet he will find the path to final result uncluttered, open and direct". All of us have to do some stock refinishing at times. This little text is well worth the \$1 that is asked for it. It is titled, "Lin-Speed Oil Finishing" .-Col. Charles Askins



POINT BLANK

(Continued from page 17)



in all our sporting loads the job of bore scrubbing has grown less onerous; this together with barrels which now have so much chrome in them that to get them to rust is a pretty difficult chore. The so-called stainless steel now used in rifle tubes has not only chrome as a part of its alloy but also some nickel which puts a damper on corrosion. This leaves only the business of metal fouling to contend with and unless the rifle is shot a great deal this is no problem at all.

The big game season is ordinarily a time of bad weather with rains, fog, ice and snow. A rifle cannot be protected from the elements and if it is wetted down all day long for a period it may not rust in the bore but the action is susceptible. The scope will suffer and so will its mount. The shotgun in the duck blind is likewise vulnerable and it needs care.

One of the best dodges is to give the gun and all its parts a treatment called "Gun Kote", sold by the primer importers in Los Angeles, Ammodyne Company. Gun Kote is sprayed on the firearm, disassembled, and is then baked in place in an ordinary kitchen oven for 30 minutes. It will protect the gun from rain, snow and the dampness of the hunting grounds. The cost is pretty high. Fifteen dollars will buy the kit and this will do one rifle, one scattergun and a handgun. I have an old Ithaca 12 gauge double that I carry in a hunting truck the year long. I gave it the Gun Kote treatment last year and since then have watched it hang in its rack on the dash. It has never showed any signs of rusting during the year it has been packed.

Another treatment that is not so costly but still effective is to take the gun down and spray it with WD-40



rust preventative. It comes in an aerosol can and sells for \$1.95 for a 12-oz. quantity. WD-40 displaces moisture on the surfaces of the firearm and thereafter adheres well. It must be renewed every few days. I sent my Indian shikari, Percy Dinshaw, a can of this preventative before the tiger season last year. He used it in the humid jungles of Madhya Pradesh throughout the winter and into the heat of the late spring and found it was a surefire guard against rust. Not only rusting from the elements (there are occasional rains and the humidity in the heavy cover is fantastic) but also there is rust caused from handling by various gun bearers. WD-40 is okay.

Best of all, of course, is to have the gun chrome plated in the bore and then black chromed on the outer surfaces and all the parts. This is a permanent cure for corrosion. Those guns that I take into Alaska, and to Africa, Asia, and Central America, are all chrome finished. This is the best solution of all and is not too expensive. This work is done by the Marker Machine Co., Charleston, Ill. Marker recommends that some oil be put on the black chrome finish on the outside of the gun but I never found any tendency to rust over this finish. The inside of the bore is plated with the chromium in its natural color which is a bluish-white and this needs no preservative of any kind. The chromium is seven times harder than ordinary barrel steel and this reduces the tendency to metal foul. The bullet simply skates over this ultra hard surface.

A favorite skeet gun of mine tends to rust in the chamber. This is caused by fast shooting and the chamber heats up. When the firing is finished the barrel cools and moisture is formed. In this same scattergun I note a tendency of the new plastic shells to leave a deposit from the cartridge in the chamber. This is sticky and after a deposit builds up extraction gets to be a problem. It may be that rusting has roughened the chamber and this in turn accounts for the plastic shell leaving a film. At any rate it causes some malfunctions.

The chamber, like the bore, can be scrubbed with a 12 ga. brass brush on the end of an aluminum cleaning rod. But there is a better method. That is to set the brass brush up in a ¼-inch electric hand drill and polish the chamber with it. This not only knocks out all the deposit from the plastic casings but also gets any rust which may lie beneath the plastic deposit.

Over a period of shooting at skeet the barrel area just ahead of the forc-

ing cone will tend to blacken. This is from the burning powder. This should be scrubbed out and the brass brush is best followed by a series of patches saturated with Hoppes No. 9. The new shotloads with the shot pouch as an integral part of the loading eliminate leading. It is no longer a problem. With the older cartridge which had no wrapper around the shot pellets there was always a considerable amount of lead deposited in the bore. Ordinarily this was scraped out by the judicious use of a brass brush on an aluminum rod. However the theory got bandied about that it was better not to remove this lead. It left the bore rough and this tended to break up the pellets and kept them from welding together. This may have been good theory but the fact remained that sometimes a bore rusted beneath this old deposit of lead.

andguns, especially the cylinder Handguns, especially and types, develop a deposit of lead in the front end of the cylinder, around the breech end of the barrel, and up into the bore for a distance. Here, again, the electric hand drill with a brass brush of proper caliber chucked up in the drill will remove this lead faster than any other way. And easier too. The brush over a period of time tends to burnish the chambers and this lessens the tendency for lead to be deposited. A handgun that is packed a lot needs a good deal of protection. One of the best dodges is to do as the Texas highway patrol did a number of years ago. They had all their service handguns nickelplated. This is not as garish as it may seem. When the troopers practiced on the range they simply blackened their sights over the nickel and it worked very well. The nickel finish is the answer to the belt gun that must be in the weather all the time.

Guns in storage 'tween seasons need not have a lot of gunk put on them. A semi-heavy oil preservative in the bore and on the outside will serve. The firearms should not be stowed in a clothes closet or in any spot where moisture may collect or be held. By the same token the gun should not be left in a case such as a plastic, canvas or leather covering. Preferably it should be stood in a gun cabinet, free from moisture and spared the dust that settles. At monthly intervals it ought to be re-oiled, both as to bore, outer surfaces, and the action.

For longtime storage, over a period of a year or more, that same gun should have a grease preservative. This wants to be generously applied, both inside the barrel, within the action and over the outside. It should then be stowed in a horizontal position and not stood up. If it stands on the butt the grease then tends to drain downward and if left standing long enough the barrel may become dry of the preservative.

T his pretty well takes care of the metal parts but what about the wood? The walnut in the stock soaks up water almost like a sponge and any amount of oil applied to the surface will not act as a barrier. When a stock gets moisture laden it commences to swell and ordinarily this bulging will occur in the barrel channel. Directly the stock warps enough to put strong pressure on a spot or two along the length of the barreltube. When this happens the rifle changes its zero. The gun is not fully protected when the hardware is oiled and greased. The wood must also come in for its attention.

The chemical industry has developed a number of synthetic resins, commonly called plastic finishes, that are used to restore boats, seal swimming pools, and for use on workbenches, garage floors and the like. These resin coatings are the best I have found for providing the complete protection the hunting firearm needs.

Not only will the rifle or shotgun that has had the stock finished with a synthetic resin be impervious to rains, snows and great humidity but the plastic is so hard it resists scratches and rough handling. The most satisfactory that I have tested is a mixture called Poly-Form. It is made by a company by that name and is located at Box 124, San Diego, Calif. Cost is less than \$5 and this will provide a sufficient quantity to do several guns.

There is some trouble to doing a stock properly with Poly-Form. The action must be pulled out of the stock and all the old finish has got to be removed. The inletted portions of the stock to include those for the action and throughout the barrel channel must be treated. The recoil pad must be pulled off as this is an important spot. A great deal of moisture enters around the buttplate regardless of its type. The finish may be applied with a spray gun or a brush. I personally prefer a camel's hair brush. Unlike linseed oil or other similar stock finish Poly-Form must be mixed with an activator and has a useable life of only a few hours after it is activated. These are only details, however, and there isn't anything difficult or involved about its application. A stock finished with the synthetic resin is ready for anything the elements can throw at it.



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THE HENRY RIFLE

(Continued from page 37)

financial crisis and the distressing unpopularity of Volcanic rifles and pistols. The problem laid in the temperamental and underpowered selfcontained cartridges. Dan Wesson had recognized this problem and had created an experimental action for a metallic rimfire round. However, all patents, including this one, were the exclusive property of the firm and when Wesson left in 1856, the rights fell to the stockholders.

By August, 1856, the Volcanic Repeating Arms Company floated a loan with its principal owners and lived out the year only to be bought up the following February by Oliver Winchester as settlement for his loans.

On April 25, 1857 The New Haven Arms Company took over production of the Volcanics. The firearms were still the same as before, but now marked "NEW HAVEN CONN. PAT-ENT FEB. 14, 1854." Mr. Winchester realized that the only thing to make his gun company a success was a new product, a new gun that would be reliable and powerful enough to be wanted in quantity.

Even though many glowing tributes testified to the performance of the action and rapidity of firepower of the Volcanic types, the small bore sizes and the smallness of the cavity for powder in the base of the conical ammunition resulted in pitifully inadequate velocity and striking energy. Winchester turned to his shop superintendent, Benjamin Tyler Henry with the puzzle. Henry had been pursuing the Volcanic system since the very early days of the Jennings Patent .54 caliber forerunner. Henry had become involved in 1850 when Courtlandt Palmer had arranged with his employer, Robbins & Lawrence of Windsor, Vermont, for the manufacture of 5,000 Jennings rifles.

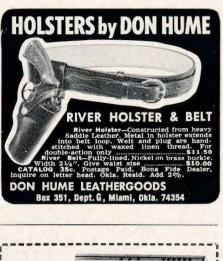
Henry had a reputation as a master designer, well versed in the manufacture of firearms, who had a rare gift of mechanical genius. Starting on his project to improve the Volcanic mechanism and simultaneously create a practical cartridge in 1858, Henry proved his mettle. On October 16, 1860, Henry patented his "Improvement in Magazine Firearms." Innovations included a two-pronged firing pin that struck both sides of the rim primer at once to lessen the chances of misfiring, a changed locking bolt, and an extractor for the .44 caliber, rimfire, metallic cartridge case. The characteristic tubular magazine was

* PAT. PENDING

still slotted—a shortcoming not remedied until the side loading gate of the King improved Winchester 66—allowing dirt and debris to enter and clog the tube. The .44 Henry rimfire ammunition was initially offered with a pointed bullet, fitting fifteen into the magazine tube and one in the chamber. The flat-nosed .44 Henry was added at a later date.

Saved from massive retooling costs by the brain of Benjamin Henry, the New Haven Arms Company turned out its first commercial Henry rifles in January, 1862. The first production was of the very rare iron frame version. The Henry rifle tipped the scales

as payola in the offices of President Abraham Lincoln, Secretary of War Simon Cameron, and the Secretary of the Navy Gideon Welles, Oliver Winchester succeeded in impressing the procurement officers of the various states. At that time, it was common practice for the states to outfit their own troops before mustering into the Federal service and several states and some regimental sponsors purchased quantities of the Henry. In addition, individual officers, enlisted men, and even regiments chipped in to buy their own directly from the marketplace. Throughout the Civil War, the sleek, fast-handling brassie showed up in





Engraved Henry rifle presented by Winchester to Abraham Lincoln.

at only nine and a quarter pounds, substantially less than the run-of-themill military shoulder arm of the day. Confident of huge contract sales, Winchester presented his newfangled wonder gun to the Army for test, boasting of its capability to be fired twice a second. This claim is possible, if one starts with a fully loaded rifle, cocked and ready to fire. The government, somewhat more modest, admitted that they achieved a rate of 120 rounds fired from the Henry in five minutes and forty seconds. That is, a shot every 2.9 seconds overall. Even at the Army's rate of fire, the Henry rifle promised awesome firepower, and that at a time when military thought was gauged to the single-shot muzzleloaders and skeptical of even the latest crop of breechloaders.

The Army Chief of Ordnance, Brigadier General James W. Ripley, was a dyed-in-the-wool advocate of the ordinary muzzleloaders and reviled any modern breechloader without rational evidence. The result of Ripley's intransgence was a meagre government contract of 1,731 Henry magazine rifles. Sales, lots of them, had to be turned up in other quarters if Winchester's operation was to survive. Where elaborate presentation models had failed battle. On numerous occasions mention is made of the "damnyankee rifle that loads on Sunday and shoots all week" by unhappy Confederate warriors. Something like 10,000 Henry rifles were turned out and used during the bloody War Between The States. The New Haven Arms Company prospering mightily. From the brink of the dark abyss of oblivion, the New Haven firm (for a time called the Henry Repeating Arms Company in catalogs meant for the troops) all of a sudden found itself rolling in money. With a net worth of \$354,000 in 1865, and a well-established network of sales agents in the territories held by the Union, Oliver Winchester's company was ready for more. More partners with financial backing were taken on, notably James Wilson and Nathaniel Wheeler, whose sewing machine company in Bridgeport provided some of the buildings necessary for expansion. The firm name was changed to Winchester Repeating Arms Company, effective February 20, 1867 and the physical assets of the New Haven operation were moved into the factory at Bridgeport. Production resumed by April 1867, with a new shop superintendent named Nelson King replacing B. Tyler Henry.





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REVOLVER TIMING

(Continued from page 20)

There are several ways of telling when the timing is off. The shooter will notice that his handgun spits lead. The firing pin impressions on the fired primers will be off center. A good method of checking the timing is to slowly cock the hammer. At the same time pressure on the cylinder with two fingers of the left hand thus slowing down the rotation of the cylinder. When the hammer reaches full cock, the cylinder stop should be firmly locked in the cut. If you can turn the cylinder after the hammer reaches full cock, your revolver definitely is out of time. I do not suggest that you attempt to correct the timing nor do I suggest that you take your revolver to a gunsmith; rather I recommend that you return the handgun to the manufacturer so that the entire revolver may be checked.

This is where ranging enters the picture. During the final inspection at the plant the inspector will run a solid steel rod down the muzzle of the revolver. This rod is long enough to reach the rear of the chambers and its diameter is a snug fit as it passes through the barrel. Each chamber is checked out in this manner. If the rod fails to enter any one chamber because of misalignment of that chamber to the barrel the revolver is not ranging correctly and is automatically returned to the assemblers for rebuilding. Ranging is a final check on timing.

Theoretically, it would be possible to have timing without ranging. From a practical point of view both adjustments are interrelated and both affect the adjustments that must be made to produce a safe shooting revolver.

Quite often the tightness of the crane and the way it locks into the front of the revolver frame can control ranging even though timing is good. Any looseness in the fit of the cylinder crane to the frame is a bad sign and, even though timing appears good, I would return the revolver to the factory for a com-

plete checkout.

POINTING THE SHOTGUN

(Continued from page 23)

because it controls where the gun points, where and how fast it swings. The hand should be carried well forward, for the closer it is placed to the muzzle the more precise will be the control over the business end. I like to shoot with my elbow almost completely straight.

The National Shooting Sports Foundation says that there are 500,000 new shooters added to the ranks of sportsmen every year, and the majority are wingshots. While we are gaining this half-million new recruits annually, we also see a loss of our marksmen. Some cash in their chips, others give up the game because of a lack of interest, or practice, or a place to shoot. We keep sixteen million hunting license holders as an average and so those who are attracted as new blood about set off those who are no longer attracted to the sport.

Where can the newcomers to the shooting sport learn the game? One of the best and surest places is at the skeet and trap clubs across the land. The marksman who journeys to the local skeet club, unlike the gunner who visits grouse covert, can always be sure of getting shots; plenty of them. And while he may not fetch home a brace of birds for the pot he can savor every tough shooting angle the game fields have to offer—the shots are there in every skeet round. Skeet is the fill-in sport, the 'tween seasons shooting game, a synthetic that substitutes a winging clay target for real flurry of feathers; it knows no season and suffers no bad hatch years.

Skeet is a challenging test of skill, but this is not to say it is difficult for it is not—certainly not anything as exasperating as golf. After a dozen rounds the average beginner with no previous experience will break threequarters of his targets, and it is likely this quick grasp of the fundamentals is one of the game's best selling points.

A scattergun, whether on skeet or on animate game, is pointed, it is not aimed. A rifle is aimed but not a smoothbore. It must be raised, swung, and fired in a second's time and to do this, the whole body must coordinate the shot. The gun is not swung and pointed solely by the use of the hands, but is directed by the eye, the hand, the body, the legs, and the feet.

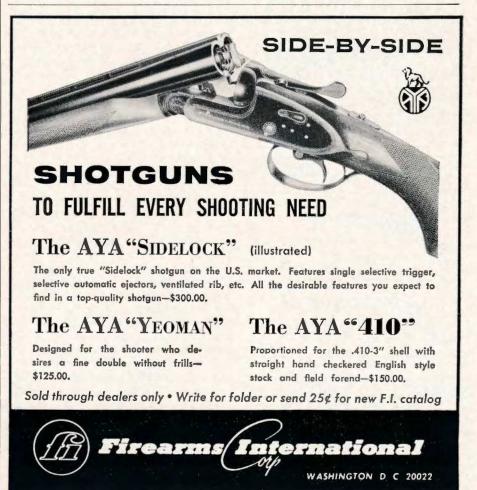
To achieve this coordination, the shooter stands with his feet close together, his heels almost touching, and with the leading edge of the body toward the target. The knees are straight but the weight is shifted to the forward leg. When the gun is brought to the shoulder the swing commences literally at the ankles and follows up through the body. The hips swivel in the direction of the target, the shoulders follow, and the arms and hands simply guide the gun. Because the feet are placed close together this smooth uncoiling of the body is possible without cramping a muscle.

T he most common shotgunner is the snap shot. He whips the gun to his shoulder, calculates a lead, slams the muzzle on that spot, and pulls the trigger. After the gun gets to the place where he believes it will be on target, he never moves the muzzle. On straightway targets he is remarkably fast and poisonously lethal, like on a covey rise where the game is close and speed is of the essence. He is also flashy on cottontail rabbits at close range and going away. But on game like ducks, doves, and ringnecks at long yardages the snap shooter's style is often something else again; he misses and misses. His slambang style of pointing the gun at a fixed point somewhere ahead of the flyer and pulling trigger does not often account for much game in the bag, for usually his calculated forward allowance is all wet.

A shotcharge travels comparatively slow. It is faster, true, than the game, but it isn't fast enough so that the marksman does not have to point the muzzle ahead of the target and keep it traveling while he pulls the trigger. That is the trouble with the snapshot, he does not swing the gun along with the bird, maintaining a lead, while he fires. This is the habit of a legion of self-taught shotgun men.

There is another shooting style that is much better. This is the system wherein the shooter sees his bird passing and swings the gun along behind; passing the muzzle through the target and swinging smartly carries it ahead until he adjusts the forward allowance to what he thinks is correct —and then pulls the trigger. Shooters who follow this style are usually wildfowlers. They have learned to shoot on some duck pass where they can spot the game for a long time before it comes into range. This shooting sys-







No C.O.D. Orders Accepted Send 25¢ No Stamps for our listings of Surplus Ammo and Guns to Dept. 6-1. Open for retail sales on Saturdays Only (most Saturdays) from 10;00-5:00. tem is a good one for pass shooting on ducks and geese, but it is far too slow for most of our upland birds, like grouse, pheasant, quail and snipe.

S till a third school advocates swing-ing the gun to the shoulder, and as it is coming up the gunner is racing the muzzle after the target. The gun comes onto the bird from below and behind, and as the muzzle reaches the flight line the proper lead has been attained and the trigger is pulled. The marksman is careful not to stop the swing of the piece as he touches the trigger. His lead is maintained and there is a sort of follow-through as the trigger is released. This style partakes somewhat of that of the snapshot for the gun is mounted just as briskly and is raced after the bird just as speedily. The only difference is the critical one; the gun is not swung to a spot somewhere ahead of the target and then stopped while the trigger is mashed. The system also has something of the slower deliberate swing of the pass shooter, for the marksman uses care to adjust his lead and make sure it is correct. But he does this swiftly, while the gun is coming onto the mark from behind and below.

This latter style is the best for the new shooting man. It has fewer flaws, and can be applied in the game fields whether on the uplands or in the duck marsh. It can also be carried over to the games of skeet and regulation trap. It will account for more birds brought to bag than any other.

The matter of how much lead to use on game is a highly individualistic one. One marksman will contend that he leads a mallard at 40 yards by 6 bird lengths. Another will say that he does not lead the old greenhead by more than four. Still another will swear that he only gets his muzzle out ahead of the bird's bill and fires. All may be right. Some shooters swing faster than others, and for them the forward allowance is measurably less. A ranking skeet champion has just written a fine manual on how to hit every target in the round of 25 shots. His leads would throw me off badly. They are all far too great, and if I tried them I would be shooting ahead of the clay. To find how to estimate the pointing ahead which you must do in the game fields there is no solution except to work out those equations yourself. Your hunting companion can tell you what his leads may be, but you must experiment until you find what these are for yourself. The same is true at skeet and trap. Others can advise but it will be your own shooting in the final analysis that establishes those that are correct.

A trying problem that almost invariably crops up with the new shotgunner is flinching. This is sometimes so strong it throws the muzzle off the mark and a miss results. Flinching is caused, usually, by too much recoil. The shooter anticipates the punishment and yanks on the trigger just as he has his lead all properly adjusted. When a gun kicks too much it is a sign of the fellow who has more shotgun than he can handle. This is precisely the reason I advocated, in the beginning, the 20 gauge for those of small stature.

There are a number of cures for flinching, some of them fairly successful. One of the first is to change loads. If you have been shooting 1¼ oz. of shot and 3¼ drams equivalent of powder, then switch to 1½ oz. of pellets and 2¾ drams of powder. If this will not eliminate the tendency to bash in on the trigger then try another gun. The softest kicking twelve gauge guns today are the new crop of gas-operated automatics. These guns are the choice of ranking skeet shooters because of less recoil.

I f a change to a less punishing 12 gauge does not cure the flinch then you should drop the 12 altogether and go to the 20 bore. Here you can shoot loads of $\frac{7}{8}$ oz of shot and $\frac{21}{2}$ drams of powder.

The shotgun is five or six times easier to shoot well than the rifle and ten times easier than the handgun. Even so, it requires practice, and the question then arises, how much? With the press of modern living, along with alltoo-short hunting seasons and oftimes scanty bag limits, the shooter wonders how he will get enough practice to be even a passably fair wingshot. One time, shooting in Spain, a titled Spaniard who was a remarkably dead shot on the difficult Chukar partridge, told me that until he visited Scotland each August and there shot grouse to the tune of 5,000 cartridges, he did not feel he was ready for the Spanish redleg. Now most of us cannot afford a trip to Scotland each fall to sharpen up on the driven game as did the duke of Algeciras, but practice we must, and unless the shotgunner can shoot away a thousand cartridges each year he simply isn't getting the training he should have. One time the Sporting Arms and Ammunition Mfgrs. Institute said that the average shooting man only burned up two boxes of shotshells per annum; a paltry 50 cartridges. If these are the

facts today, we must indeed be a nation of poor wingshots!

What is a good trade cartridge for bird in the game lands? On mallards it is three cartridges per bird; on grouse it is the same. On ringnecks, at the first of the season, it is two shells per gaudy rooster, but at close of season it is three. On cottontails it is a rabbit for every two cartridges. And on bobwhite quail it is a limit of 12 with 16 to 18 cartridges. On doves it is a box of shells for the 12-bird bag. On blue quail, those desert runners, it is ten birds for 25 cartridges. With crows, when the wily game is decoying well, you can count a bird per shot. And on geese, good shooting is represented by a swap of three or four cartridges per honker.

At skeet, the first dozen rounds should boost the tyro gunner to a total of 18 busted targets per round, at 25 rounds this should be up to 21 or 22; after that it comes hard. However, with 50 rounds under his belt the marksman should hit 25 occasionally and stay consistently around 23 as an average. At regulation trap, the first dozen rounds should touch 16-18, and after 25 rounds he should be hitting 20 targets with regularity. After 50 rounds, he should keep an average over 22 and hit 25 with some rounds.

There probably is no worse mistake made by shotgunners, whether those just getting started or those who are veterans, than to attempt to shoot guns that are too closely bored. Most of the shotguns sold in this country are full choke. This throws a pattern that is so tight it does real harm to many marksmen. The pattern is simply too narrow for him; he must swing and point too precisely to hit well. What he needs is a more open bored gun to compensate for his mediocre ability.

The two best borings in the 12 gauge shotgun are modified and improved cylinder. The modified is an allaround boring and should be the choice of most field shots. The improved cylinder is usually thought to be good only for close-rising uplands game like quail, snipe and grouse. Actually, it has a great deal of utility in the duck blind over decoys and is fine on such game as doves that come into feed patches or to water holes. The improved cylinder is a boon to the new wingshot and he would do well to select this choke instead of the full choke in his first shotgun.

The first 20 bore gun if it is a single barrel should be bored modified choke. If it is an over-under, the first barrel (the under) should be improved cylinder and the second (above) modified. If the gun is to be for wildfowl then it can have the more open tube modified and the other a full choke.

The best barrel length, whether in 12 or 20 gauge, is 28 inches. This is a happy compromise. For 12's that will be used exclusively at skeet, 26 inches is correct; duck guns should go 30 inches. But for the all-around, allpurpose scattergun, you cannot beat a 28 inch barrel. For the 20 gauge, a length of 26 inches is ok if the gun is to be used exclusively on close-rising upland birds. Also, the 20 gauge skeet gun is best at this length, but like the 12, for every use 28 inches comes nearest to being proper.

GRIM CALLING CARDS

(Continued from page 27)

very moment, the hand, shoulder weapons, and machine guns of the world, up through the 23 millimeter, are rifled with lands and grooves numbering through 10. To further complicate matters, several nations, including our own, have, at various times, used rifling of 2, 4, and 5 lands and grooves for the same caliber. Secondly, some nations use both left and right hand twist rifling, and again that includes our own. Lastly, one might even be called upon to check out a bullet fired from a weapon without any rifling at all in its bore. Due to such factors as climatic conditions, lack of cleaning and preserving equipment, or ignorance, guerilla weapons are often neglected to such a degree that the rifling becomes non-existent.

how the recognition of rifling types is used to identify unknown fired projectiles. The bullet to be described is the true case of a missile returned from Viet Nam. Very little remained of the bullet in question, for after its violent impact on a hard target only a small remnant of its jacket was available for study. Furthermore, the jacket remnant was folded back upon itself so that both rifling marks and cannelure were concealed from view. When the jacket was unfolded, the rifling marks indicated that the bullet had been fired from a gun with a left hand twist. This fact not only eliminated some nine or ten weapons with right hand twist rifling known to be

But at this time, a typical example

is presented that will best illustrate



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used by the enemy, but narrowed the bullet's origin down to a choice of British, French, or American firearms. Once the field had been thus narrowed down, the British and American weapons were soon eliminated by measuring the distance between the land and groove marks present on the remnant. By the same method then, the remnant was definitely established as being a portion of the bullet jacket of the French 7.5-54mm Ball Model 1929. In other words, the bullet had been fired from one of eight different models of French rifles or machine guns.

nother method often used to make A a quick identification of an unknown fired bullet is known as the visual comparison technique. This method is used on those occasions when the unknown slug is still in reasonably good shape after impact. In the practical application of this system, the operator takes the unknown bullet in hand, and tries to match its length, diameter and configuration, side by side, with a similar bullet of known caliber and origin. This method has its limitations for, though two bullets may look alike outwardly, they may be entirely different as to internal construction, weapon and purpose. This comment brings us to the next method of making a more positive identification of an unknown bullet.

This next technique concerns the recognition of bullets by the very distinctive types of cannelures or crimping grooves which may be cut into their jackets or even on the mild or hard steel cores underneath the bullet's jacket. Cannelures afford a better grip of the jacket on its core, and also provide a crimping groove for the cartridge case neck to be pressed into during loading. However, not all cannelures serve as crimping locations on a bullet jacket, for quite often, one will encounter cartridges in which the bullet has yet another cannelure positioned well above the neck of the cartridge case itself. In such cases, it is an additional lock-on point for the jacket to more securely hold the core within, and it serves as a breaking point for certain types of bullets, such as the A.P.I., which upon impacting on a target can possibly wreak more damage by splitting into two parts.

Crimping cartridge case necks into bullet cannelures is standard procedure with the world's ammunition makers, although four powers (and often their satellites) have used the indent system on certain of their cartridges. Specifically, the Russians, Chinese, Japanese and Italians have used three indents on some of their cartridge cases—indents that dent right through the case neck, and on into the bullet's jacket. Such a method of anchoring a bullet to a case serves as one of the finest clues while doing a "make" on an unknown bullet. For example, if one picked up a short pistol sized slug, and that slug bore three indent marks just about 0.187 inch from its base, one could state with a reasonable certainty that the unknown had once been a 7.62-25mm Soviet pistol or submachine gun bullet.

Military cannelures are almost invariably fashioned in patterns that are peculiar or distinctive to bullets with a particular function. It follows that the ability to recognize the various patterns is most important to the military ballistician, for more often than not the only remains left for study will be a small section of the bullet's jacket. Small as such a piece may be if it contains a portion of the cannelure or cannelures that can be seen or measured, an identification can usually be made.

C onsider, if you will, a U.S. Caliber .50 A.P. bullet as it smashes into a tank. Just prior to impact that bullet's pointed nose had been painted black, but after impact, all trace of its paint job disappeared completely. Occasionally though, a fired bullet will show small traces of its original paint job, and it is a definite aid in determining that bullet's intended function. Color coding is yet another technique used in bullet I.D. work.

To get off to a good start on color coding, let us now consider our own Caliber .30 or .30-06. In its military application, three of its several special purpose cartridges are color coded as follows: the A.P.M2 bullet bears a black tip, the A.P.I. M14A1 an aluminum painted tip, and the Tracer M1 sports a red tip.

Let us now consider the color coding of three bullets used with the Soviet 7.62-54mmR, a rimmed cartridge still in use by the Viet Cong. The Soviet color coding was as follows: the A.P. had a black tip, the A.P.I. a black and red tip, and the Tracer was tipped with a spot of green. Since WW II, both the Russians and Mao Tse Tung's boys turned out another version of this cartridge with a mild steel cored Ball with a white tip.

Thus, when comparing the color coding one is tempted to conclude that certain trends in international color coding of bullets are discernable. However, a quick run down of the color coding schemes of other nations soon dispels all such notions. Consider the A.P. bullet for example. Though the U.S.A. and the Soviets produced their WW II A.P. bullets with a black tip, the French turned out their 7.5-54mm A.P. with a solid copper color. The Italians of the same period issued their 8mm A.P. bullet with a white tip; while the United Kingdom produced its .303 W-MARK I A.P. with an unpainted nickel colored bullet.

A ctually, the very absence of color coding on a fired bullet is of itself a danger to the handler, for it may become necessary to open a bullet's jacket to check its core. Thus, in the interest of safety it is better to treat all unknown fired bullets as A.P.I.'s, A.P.I.T.'s, or as Incendiary types that do not conform to known Ball or A.P. weights and lengths. Though it is true enough that the incendiary mix in such bullets requires a fairly good impact in order to be activated, there is no guarantee that careless handling of such a bullet will not provide just the friction needed to set off a fireball of the most brilliant, blinding intensity.

Once its jacket is gone, the remains of a bullet may take many forms depending on its particular mission. It is the recognition of the many and varied forms of inner bullet construction that makes up the fifth method used in bullet I.D. work. First in line for consideration would be the Ball, for it is the most used bullet of any nation's infantry. Let us consider all of the bullets about to be described as having impacted on military equipment. Depending on the metal thickness of the target, and the angle of obliquity at which a Ball strikes, it will either perforate the target, ricochet from it, or come to rest in or on the target. In any event, there is the possibility that in or about the impact point, there may be a sizeable amount of lead present. Such lead may be smeared along the target's surface or may line the perforation hole if the Ball has gone through. But there is also more than lead to look for with a Ball hit. One might also discover a mild steel core in the vicinity of the hit, for many nations presently use mild or soft steel, rather than lead, as a core for Ball bullets. Many such modern bullets that contain mild, or even hard steel cores, also contain a complete lead sleeve about the core, or else they contain a nose or base filler made of lead to bring a steel cored jacketed projectile up to desired

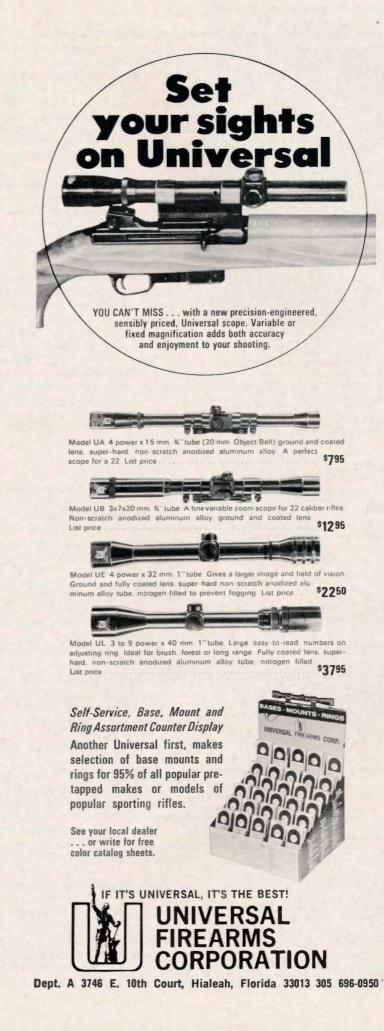
total weight standards. Thus, it cannot always be assumed that by the mere presence of lead particles or smear, a bullet hole was caused by a lead filled Ball. The mild steel core of the Ball bullet does make for an easy I.D. however, for even though the bullet's jacket may be completely destroyed by impact with a target, the core itself often does not come apart. The mild steel core will bend, warp, mushroom or flatten but it will stay all in one piece. This happy faculty of the mild core makes its identification much easier, for by weight alone, if nothing else, the operator can usually pinpoint the core as to caliber and type.

In direct contrast to what has been said of the mild steel core, the hard steel, brittle core of the A.P. bullet will often break up when it strikes a hard target. At other times, the A.P. will smash straight through a hard target completely unbroken, leaving only its curled up jacket neatly fixed in the perforation hole. An A.P. core might shatter upon impact, the several broken parts will retain their normal configuration and one is able to recognize certain features such as the angle of a boat-tailed base, a cannelure if any, or even the total or partial machining known to be used on cores of a like type.

Much of this applies equally well to the cores of the A.P.I. and A.P.I.T. bullets, for both of these latter types are of the same metal hardness as the A.P. core. In general, the A.P.I. core is almost always of the same or a little less weight than the A.P. core, while the core of the A.P.I.T. bullet is usually much shorter and lighter than both.

The sixth and last method of identifying an unknown projectile concerns the close study of the damage effects of the missile impacting on the target itself. And if this approach seems analogous to establishing the identity of the little man who wasn't there, it isn't difficult if one knows how. For example, bullets or projectiles containing H.E. (high explosive), such as the 20 or 23 millimeter, almost invariably leave their targets in such a shredded mess that even a novice can recognize their effects. The smaller bullets do not deliver such spectacular damage to the target, but the type of clues they leave behind are often equally revealing. The following examples speak for themselves:

The diameter of a clean perforation is very helpful in estimating the caliber of an unknown bullet impact, for the difference between holes caused by bullets of .223, .30 or .50 caliber is





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I. GOLDBERG & CO. Dept. GM 429 Market St., Phila., Pa. 19106 quite apparent to the eye, even without the use of measuring devices.

The ricocheting bullet, which strikes its metallic or wooden target broadside on, and leaves its complete silhouette behind for fairly accurate measurements of length, diameter, and base configuration. Even cannelure imprints can occasionally be seen.

The impacts accomplished by bullets of the A.P.I., A.P.I.T., or Incendiary type, which often leave smoke and flame blackened areas on the targets, if their incendiary contents reach full or partial activation.

There are several safety rules concerning the handling and collection of cartridges and live bullets which must be observed at all times. It is suggested that the following safety rules be looked upon as gospel:

1. Do not use an inertia type bullet puller on live cartridges loaded with A.P.I., A.P.IT, Incendiary, spotter type bullets, or bullets which may contain an H.E.I. filler. 2. Do not try to remove the compound from a live Tracer bullet by setting its exposed base afire. Instead, hold the bullet under water, and then pry the compound out of the tracer cavity with a brass pick.

3. Do not attempt to dissect a live A.P.I. or Incendiary bullet, for foreign incendiary types contain phosphorus.

4. Be suspicious of any unknown bullet which is color coded red, as it may be an H.E.I. type or a spotter bullet. If in any doubt as to a bullet's potential, leave it alone and check it out with the experts.

It should be quite apparent that this article has only scratched the surface on the entire broad field of collecting and identifying unknown fired bullets; for those who may have found the subject interesting, it is suggested that you start collecting those fired specimens now. You may never acquire such expertise that the F.B.I. or Scotland Yard will seek you, but you will have a lot of fun.

GUNS AND THE LAW

(Continued from page 29)

simultaneously in different locations over a wide area in conjunction with arson and use of explosives, is usually beyond police capability to suppress and contain due to the magnitude, surprise, and the lack of manpower. This normally calls for use of military force with all the special equipment and organizations this implies. To completely dominate or prevent such an attack, it is necessary to deploy great numbers of men on roof tops and in other locations and then follow-up by search operations.

Sniping must also be distinguished from heavy, continuous rifle and automatic small arms fire from a given area where it is obvious that a number of individuals are involved. Combat developing from this type of action is defined by the military as a fire fight and necessitates the employment of armored vehicles and automatic weapons, grenade launchers, obscuring smoke and other military measures. Although some major police departments have, or are developing, capabilities to initially counter this form of armed insurrection, combat in cities on any large scale is a military function. At the first indication of this type of combat (through hard intelligence or actual encounter), back-up military units should be deployed. The more numerous National Guard and Army units are best equipped for this task.

Civil police control of the increasing sniper menace can only be achieved if quickly accomplished by aggressive tactics and carried out by well equipped and trained officers, acting in teams. The fewer the police numbers, the more aggressive and immediate the counter action must be to eliminate this threat to other riot control operations. An untrained, panicked police force, paralyzed by sniper fire cannot operate effectively to prevent mob violence from spreading out of control.

The skilled sniper will fire from a concealed position during daylight hours, usually from a position in a darkened room well back from a window or opening, so that the flash, smoke, and report of his weapon are difficult to locate from the target area. During the hours of darkness, the difficulties of locating him are increased. The amateur sniper can be seen during daytime and, at night, can often be located by muzzle flash, but the professional will always take advantage of cover and carry out such precautions as moving his position immediately after firing. The skilled sniper, using high velocity scope sighted firearms, can operate from a distance and this further complicates the police problem as only the impact of the bullet, or its crack may indicate his approximate position. Snipers using low velocity weapons, such as rim fire .22

GUNS . DECEMBER 1968

caliber rifles can fire at targets from very close ranges and still be relatively secure from police counteractions, especially if they fire with riot generated noise and confusion. The advantages are all initially on the side of the sniper. This makes his elimination a task that should be undertaken only by trained police, practicing proven military tactics with skill.

When an officer is fired upon from an unknown position, he should take cover and return the fire, if within range, and, he is able to definitely locate the source. Indiscriminate police counter-fire is not only liable to injure innocent bystanders but also pinpoint the police position for the sniper.

report of the sniping incident A should be made as soon as cover is established. If unable to locate the exact position of the sniper, the report should give as much detail as possible as to area of action, approximate location of the source of fire, building, etc. Observation should be maintained from cover until arrival of support. Initial police personnel arriving on the scene should cordon off the area, if the building the sniper occupies can be identified, officers should be placed in strategic positions on roof tops, adjoining buildings, etc., so as to prevent escape. If the sniper continues to fire, such fire should be countered only if his location can be fixed. This is important since innocent people are usually in the same building or area.

In the event the exact sniper location is not determined, police observation posts should be established on vantage points covering the general area. These posts should be manned by pairs of officers. One officer, with binoculars scanning an assigned sector for the sniper location, the other, preferable armed with a riot shotgun, etc., furnishing support and protection to the observer position, from the flanks and rear. During the observation phase constant radio communication with other posts and the officer in command should be maintained.

Once the area has been sealed off and the location of the sniper has been fixed, disciplined covering and aimed fire can be directed until he has been silenced, forced to change position, or flee. All occupants of the building should be ordered, by a bull horn or other police systems, to evacuate. All who comply should be removed from the area as rapidly as possible and should be immediately interrogated as to knowledge of the sniper.

Failure to respond to police orders to surrender or clear the building by occupants sets the stage for the use of

tear gas and obscuring smoke. During this phase, it should be recognized that innocent occupants may be unable to obev police orders due to threats of the sniper elements, etc. This may delay or modify assault plans, However, actual assault and entry may have to be made at the ground level. The assault party should be covered during the advance by protective fire, if the men are exposed. An armored vehicle or obscuring smoke can be used to cover movement. Entry from the roof top level is advocated if possible and practical. All points of possible exit must be covered. Each room from roof to basement should be thoroughly searched for occupants and weapons. all individuals encountered, male and female, of all ages, should be cleared from the building and detained. If the building has been effectively sealed off, the sniper suspect or suspects, will be apprehended. Usually, at this stage, no one will be still carrying a weapon. Nitrate tests should be performed, and finger prints should be taken of all occupants and checked against any weapons discovered.

ostile firing from amidst crowds H out in the open is not the method of the sniper who uses cover and concealment for his operations. If the assailants can be pinpointed, this type of action is best countered by return fire from police units who have assumed cover, or prone positions. If the individual firing cannot be identified or separated from the crowd, basic procedures such as cordoning off the area. bull horn advice to the crowd to pass through police lines for search and identification, and other control measures must be given. Crowd failure to react should be followed up by use of tear gas and smoke to accomplish dispersal. All avenues of exit should be controlled by police in order to check out the crowd elements, provided time, manpower and the police purpose is served.

Day and night counter-sniping operations can be greatly aided by police armored vehicles and helicopters. They serve as mobile observation posts, bases for—covering searchlights, and close quarter firing bases for firearms and chemical agents. Helicopters can also be used to land police on roof tops for counter sniper and raid operations.

Realistic police training in built up areas, using all types of special counter sniper and barricade equipment is a must. Counter-sniper teams must be trained and organized and a great deal more attention from the command and political level must be devoted to the sniper problem.



THE 6 MM'S

(Continued from page 33)

larity of this caliber in those early days, and he made up a lot of versions of it for southwestern shooters. His favorite, and the first one he made for me, was the .257 improved case necked down to 6 mm. This is nearly identical in capacity to Remington's .244 and the later 6 mm Remington.

It was right around this time that Fred Huntington of Oroville, California, also became interested in 6 mm and he brought out a version on the .257 case that he called the 6 mm Rockchucker. By now the 6 mm vogue was beginning to spread out in all directions. Warren Page of Field and Stream magazine was one of the most enthusiastic of the writers in promoting this caliber. Winchester and Remington both worked out their individual versions; with Winchester adopting the .308 (7.65) case and Remington the .257 or really the 7 mm Mauser case, in a slightly changed form, Both companies put these new offerings in production in 1955.

The first 6 mm that I actually used very much was the .240 Cobra. Results with this were so outstanding that after a talk with P. O. Ackley I had him rebarrel my wife's .257 improved to a 6 mm. Then all I had to do was get a new set of dies, neck down the .257 improved cases, load my ammunition and I was in business. This was in the 1940s. Ackley now had his controlled expansion bullet, in 100 grain weight, in production and 4350 powder, ideal for use in the 6 mm, was also on the market. For several years I used this bullet on everything from rockchucks to elk with excellent results. This 6 mm x .257 improved rifle had a 1 in 10 twist barrel and so have all my later 6s-even a 6 x 47.

It quite surprised me to see Remington bring out their .244 with a 1 in 12 twist and when Winchester brought out the .243 with a 1 in 10 twist it immediately caught on as a varmint-predator and deer rifle because it could handle the 100 grain pointed bullets accurately, while the .244 was not able to do this. The .243 Winchester easily out sold the Remington several times over. After seven years of fooling around with the .244, Remington finally changed to a 1 in 9 twist and called this new one the 6 mm Remington. This one really caught on and sales in proportion to the .243 Winchester are fast increasing. Most gun fans like the 6 mm Remington best, because of its long neck. Also, it has a bit more powder capacity than the .243 so it can be loaded to about 100 fps higher velocity. Accuracy of the .243 and the 6 mm is equal.

The 1 in 9 twist of the 6 mm Remington handles light bullets as well as a 1 in 10 twist does. It also allows the use of bullets to 112 grains weight. This weight can be obtained from some of the independent bullet makers for reloading. I used my 6 mm .257 improved barrel until Remington got into production on ammunition and then I had it rebarreled in a 1 in 10 twist and chambered to a .244. It has been restocked by Len Brownell and is one of my favorite working rifles.

After the factories announced their production rifles in 6 mm, gun men all over the country started wildcatting other cartridges in an effort to better the factory rifles. Even Holland & Holland of England got into the act with a full case magnum and claimed they got 3500 fps with it using 100 grain bullets. Actually, on some tests made over here with factory ammunition only showed 3370 fps maximum.

I tried a lot of 6 mm versions during this time. I spent quite a bit of time and effort on one, the 6 mm on a 7 x 61 S & H case, but never did obtain a gain of any importance in ballistics over the factory guns. I did get to using some smaller cases such as the 6 x 47, the 6 x 250, etc., and still do like these for special purposes. I also salvaged my "shot-out" .219 Zipper in a 99 Savage by having it rebored and chambered to 6 mm x .30-30. I got about the same results as with my 6 x 250. One evening, Warren Page, Fred Huntington, Joyce Hornady and I sat around the dining room table out at our ranch and drew up some plans for a new wildcat they called the Page Super-Pooper. It used a bit more powder and had maybe just a tiny bit more oomph, but really not enough to make much difference to the animal hit with it.

During the years that I have used the 6 mm I would make a rough guess that I have seen around a 1000 head of various game taken with this caliber. This list would include game animals from antelope and deer up to black bear and elk and were killed by hunters and guides, friends and a considerable number of my own kills. One fact proven many times was that, although bullets of 70 to 90 grains will kill game, they often do not penetrate properly, will blow up and create a large, bloody wound, thereby ruining much edible meat.

My first choice of a bullet for reloading the .243, the .244 or the 6 mm is the 100 grain Sierra. With this bullet I have killed or seen killed 36 head of elk and have never just wounded and lost a single one. Sheep, big mule deer, whitetail deer and antelope are other game animals for which the 100 grain bullet is right. This weight also bucks wind much better than lighter bullets. I do use 80, 85 or 90 grain bullets in some of the lower powered, smaller case 6 mms, such as the 6 x 47. the 6 x 250, the 6 mm International and the 6 x .30-30 improved. Because they produce less velocity the bullets don't blow up on game like they do in the faster .243 Winchester and 6 mm.

I have killed several black bear with 100 grain bullets using both the ,243 and 6 mm. The bullets expanded well but also held together sufficiently to make good kills, although I felt they were just marginal in toughness on shoulder shots at ranges of 100 yards or less. Last year when I got my first .240 Weatherby Magnum, with its 3350 fps velocity with 100 grain bullets as against my 6 mms 3120 fps, I realized that I would need tough bullets to stand up on game, especially at closer ranges. I selected the Norma 100 grain steel jacket bullet and the Nosler 100 grain bullet for use in this .240 Weatherby. They proved to be very excellent in this rifle and I find them equally good in the fast wildcats, the 6 mm x 06 and the 6 mm x .284.

I have found these three cartridges, often called overbore size cartridges, to be very good long range ones. Pressures being equal, they are all in the same identical velocity range. Care must be used in the choice of powder and in loading them. Of the three, my preference is for the .240 Weatherby Magnum because of the belted case and the fact that both rifle and ammunition are production items available from dealers.

I have personally used different types of the 6 mm on hunts—ranging in scope from the south part of old Mexico to the Arctic pack ice and on quite a number of different types of game and predators. For caribou, which I consider to be the most easily killed member of the deer family, I would select one of the 6 mms, used with proper bullets, if I were killing for the market or for game control.

The choice of the proper bullet for a 6 mm is important. Barrel length, velocity of the load, distance at which the shots will be made and type of game to be hunted, must all be considered. It is foolish to tell someone that a 6 mm rifle is adequate for deer hunting or for that matter adequate for any type of game and then just stop there. The barrel length, cartridge and bullet weight and particular type of game must be considered.

Except for excessively windy conditions, the smallest of the 6s, the 6 x 47, is the most consistently accurate of the group out to 200 yards or so. It is also the most accurate and consistent caliber above the .224. Although the 6 x 47 is the most accurate 6 mm, my favorite of the small cases is the 6 x .250. I have this chambering in a short action 700 Remington, with a 20 inch barrel and I use this one a lot for deer. I use 85 grain Nosler bullets loaded to 300 fps muzzle velocity and get excellent kills. For long range antelope and deer killing, out to 400 yards, I like the .243 Winchester or the 6 mm Remington and now that we have the .240 Weatherby Magnum in production, I would say that the ultimate in this caliber would be this one, that extends the possible range 50 to 100 yards farther.

Although 89, 85 and 90 grain bullets of all makes work well on light type game, when used in cartridges of less power and velocity than the .243 or 6mm, they produce inconsistent kills and poor penetration when used in the 6 mm and .243, especially at close up or medium distances. Of all the makes I have tried or seen used, under 100 grains, only the Nosler or old

Ackley controlled expansion bullets were satisfactory.

In the 100 grain class, the Sierra has worked perfectly for me in either the 6 mm Remington or the .243 Winchester, ever since it came out. However, in recent tests I have made with the .240 Weatherby Magnum, the 6 x 06 and the 6 x .284 shows all 100 grain bullets I have tested, except the Nosler and Norma, to be too lightly constructed for best results in close up or medium distance shots. I have had no experience at all with the 105 grain Speer bullet in these higher velocity rifles. It may do all right.

I do not consider the 6 mm of any version or with any bullet to be an all round elk rifle. However, all the elk we have seen killed with it have died as quickly as those shot with a larger rifle. This was due to the use of proper bullets and excellent placement of these bullets by the shooter. One of the reasons for this good shot placement is the fact that the 6 mm with its low recoil plus its flat shooting ability, tends to help the average shooter place his shots better than he would with high recoil, high trajectory loadings.

After 24 years use of the various 6 mms I feel that the 6s are the finest open range antelope-deer rifles made and as a varmint and predator rifle it can not be topped when recoil and easy shooting is considered. It has certainly earned its place as number four caliber in sales and popularity and may, in the next few years, go even higher. It deserves a place in any shooters rifle rack and like the .30 caliber will be with us a long time.

WINCHESTER HD MAGNUM

(Continued from page 31)

in spades. Employed to fill the interstice area between the shot pellets, it acts as a buffer material to prevent the pellets from becoming badly misshapen as that five-and-a-half tons of chamber pressure starts the wadding forward to produce an inertia setback. The plastic "sawdust" doesn't completely eliminate pellet damage at this juncture, but its accomplishments are great enough to give pattern density a substantial boost.

An added bonus is that the undamaged shot pellets lose velocity less rapidly. So it not only reaches the target a shade quicker, but it arrives there with a bit more energy.

Several of the 11/2-oz. HDM loads

GUNS . DECEMBER 1968

that I received for testing were broken down and the granulated polyethylene was separated from the shot charge to determine the amount used. Handloaders take note, it ranged from 18.3 to 19.1 grains. The buffer material was distributed thinly at the head of the shot column, very liberally at the base where the pellet jamming action is the most severe.

Being a handloading buff and having experimented considerably over the past few years with various buffer materials, including plastic "sawdust," I was impressed but not really surprised with the results when I took these new W-W loads to the pattern board. So that a comparison



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could be made, regular Mark 5 shells in the same loading and shot size were fired first. At 40 yards, the short magnum HDM loads showed a marked improvement over the regular fodder, giving an increase in pattern density that ranged from 6.9 per cent (15 pellets) for the 4's, and 9.3 per cent (16 pellets) for the 2's.

But these density increases in the traditional 30-inch circle are really only half the story. The other half, and certainly a no less important aspect, centers around pellet distribution. And here again the HDM loads stood head and shoulders above the regular Mark 5's.

The HDM loading produced patterns with a very pronounced concentration of pellets registering in the 20-inch center of the spread. With the regular Mark 5 loading there was, in contrast, a definite trend toward more balanced distribution.

The dense-center pattern is not always desirable. For normal decoy shooting on ducks or geese, or for upland gunning in general, it is actually a disadvantage. If a bird is well centered, it will be seived with more pellet hits than are necessary. If it isn't centered but is caught instead with the low-density edge, the gunner very likely will have a cripple on his hands.

But for those really long-range at-

tempts on high passing waterfowl it is a different mug of beer. For this type of powder burning the densecenter pattern is the answer, because as the yardage grows long it is the very core of the shot spread that becomes the "working" pattern. The edge of the shot cloud has, by this time, dispersed itself to a point of total ineffectiveness. Summed up simply, this means that for a given efficiency, whether it be 60 or 80 per cent, the dense-center pattern will reach out and kill at a greater distance than will the one with balanced pellet distribution.

It is, of course, the granulated polyethylene in the HDM loading that produces the high density in the core of the 40-yard shot spread. At the same time this buffer material offers yet another advantage, this being improved load-to-load performance in terms of uniform efficiency. Sometimes we tend to overlook this facet, but it is a very important yardstick for measuring a shotshell's worth.

In this realm, the superiority of the HDM loading over the regular Mark 5 becomes clearly evident when we look at the pattern summary data. The standard loading in 4's actually did quite well with an extreme density variation (EDV) of 6.2 per cent, while the same shot size in the HDM loading came through with an outstandingly low 2.4 per cent.

With the 2's, there was a much greater spread between the two loadings, this running a lousy 24.6 per cent for the standard Mark 5, and a highly acceptable 5 per cent for the HDM. Many long sessions at the pattern board have shown me that the normal EDV for factory loads will range from about 8 to 12 per cent.

The Winchester people talk of pattern efficiency running as high as 90 per cent with the new HDM loads. Most modern full-choke 12-gauge barrels carry about .035" of muzzle constriction and with this amount of "squeeze-down" I believe that an 85 to 90 per cent figure is about right.

The Browning autoloader which I used for pattern testing the HDM loads carries only .026" of choke. This is actually an improved modified boring, yet a few individual patterns ran as high as 85 per cent.

On all counts—density, pellet distribution and load-to-load variation these HDM loads by Winchester-Western inject new life into the longrange shotshell picture. No, they will not double as anti-aircraft rounds, but all indications point to clean kills at those distances where the standard Mark 5 loading produces a cripple. The gung-ho pass shooter is not likely to object to the small mark-up on the price tag.

IRON CURTAIN GUNS IN CANADA

(Continued from page 35)

what equipment would fulfill these objectives at minimum cost.

For some years young Canadian shooters have cut their teeth on a program sponsored by Canadian Industries Limited, involving sporting type .22 cal, rifles in a postal program involving graduated awards for proficiency. To participate in this program, the rifles used must meet requirements as to weight, sighting, equipment, etc. Target rifles wouldn't do, and obviously we couldn't afford them. Therefore, making a virtue out of necessity, we purchased six Russian TOZ 8 rifles. Most of the club believe we spent our money wisely.

Each TOZ 8 rifle comes from the distributor in a cardboard carton packed in a heavy plastic bag and complete with rust inhibitor and instruction booklet with final inspection data.

Notwithstanding the chickenscratching on the grip which passes for checkering, the rifle is obviously a military trainer. Sights and trigger bear a more than coincidental similarity to those of the Moisin-Nagant 91/30. Design is simple and rugged. The bolt is massive and machined from solid stock, twin extractors insure extraction, and a heavy striker and relatively long striker fall assure ignition with steel cased Russian ammunition. The root of the bolt handle serves to lock the action.

A loading ramp works properly, chambering rounds laid in the open receiver without shaving lead from bullets. Chambering and bore are above reproach and appear to have a lapped finish. Chambering and head space is snug, and all exterior metal is well polished with an excellent salt blue. Bolt manipulation is rather difficult due to the strong striker spring which is partly compressed on raising the bolt handle. The handle itself is curved close to the stock, and a small knob does not provide a secure grip.

The stock is extremely thick

through the grip but is quite comfortable both off hand and prone for adult use. The pull is too long for younger children; however, shortening the butt and slimming the grip are easily accomplished. The absence of a manual safety is of little importance in a single shot rifle designed for supervised range firing.

For open sights the TOZ 8's are excellent, lacking windage adjustment but providing a clear sight picture. When adjusted to 50 or 60 meters the sights give X ring point of impact with a 6 o'clock hold at 20 yards. It is noted in the instruction book serialized with each rifle that each must fire under a 50 mm group at 50 meters with open sights. No problem was experienced in firing possibles prone at 20 yards. The long heavy barrel gives an excellent sight radius and some muzzle heaviness, fostering steady holding off hand.

The trigger pull is smooth and light and the two stage pull gives excellent results. The receiver is equipped with a large recoil lug, a novelty on a .22 rifle, which securely positions the action in the stock. The barrel is free floating.

Evaluating firearms must be done with regard to their price range. You cannot fairly compare rifles from the below \$30 class with rifles in the \$75

to \$100 range. In its price class few, if any, North American .22 rifles can compare in ruggedness with the TOZ 8. With micrometer aperture sights the same rifle becomes an excellent light target rifle. The rifle serves the purpose for which it was designed, that is, as a simple, accurate. preliminary training gun.



BRNO MOD. 581 AUTOMATIC

Mechanism type: Caliber: Magazine capacity: Weight: Barrel length: Rifling:	5-½ lb. 22 in.
	6 grooves
Over-all length:	38-7/16 in.
Stock:	Wood, walnut; varnish finish; cheq- quered length of pull 13-15/16 in.; sling swivels
Safety:	Push button
Sights:	Rear sight—two leaf U-notch 50 and 75 meters; front sight—hooded bead on ramp
Sight radius:	17-1/4 in.
Price:	\$75 Canadian, approximately
Take down:	1. Press magazine catch and remove
field stripping:	 magazine. Loosen take down screw at rear left of receiver with coin and pull to left as far as it will go. Push up on trigger guard, pushing receiver assembly up out of stock. At the same time pivot forward to disengage barrel from fore end. Press forward on recoil spring guide, lift, and remove. Press trigger group take down stud at rear right of group and pull to rear. Remove bolt group from rear of receiver.
Mechanism type:	Turn bolt, self cocking single shot with loading ramp
Caliber:	22 in. long rifle
Weight:	6-½ lb.
Barrel length:	25-1/4 in. (3/4 in. diameter no taper)
Rifling:	4 grooves
Over-all length:	43-¾ in.
Stock:	Half stock of birch; varnish stain finish; crude checkering on half pis- tol grip; sling swivels
Safety:	None
Trigger:	Double pull, military type
Sights:	Rear sight—U-notch tangent 25 to 250 meters

Front sight-hooded post on ramp 23-1/8 in.

\$27 Canadian, approx.

Field stripping.-A spring steel cap covers the end of the receiver and is removed by pulling smartly. The bolt is removed by raising bolt handle and pulling to rear with trigger depressed.

This procedure is all that is necessary for standard maintenance.

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HARRIS BIPODS

MODEL 1A \$14.50, 1B \$17.25 POSTPAID

Guaranteed US Pat. 3,327,422

Standard Bipod Prone: bore height, 14 inches. Legs extend to 24 inches for sitting. Wt. 11 ozs.

Benchrest Bipod Heights 8 and 131/2 inches with intermediate adjustments. Wt. 8 ozs.

Quality made from high strength aluminum. Stressed parts are alloy steel. Attaches quickly and securely to Q.D. sling stud; can be removed in seconds. Legs are held either folded parallel to barrel or in erected position by strong spring tension. Spring loaded leg extensions eject and lock instantly by depressing catch. Sling may be used in usual manner.

1B model has adjustment for off-center sling stud and extra attention to finish.

Both models available in either height. See your dealer or order direct.

HARRIS ENGR., INC. Box 305, Fraser, Mich. 48026

Sight radius: Price:

THE DOUBLE W shotgun cleaner and oiler is the modern approach to an old chore. The 34 inch straightgrained wooden rod is entirely covered in top grade Dynel to insure that it does not scrape the ejectors or ends of the barrel. When travelling inside the bore, the compacted Dynel fibers scrub the barrel free of grime and fouling in just one or two short minutes. A new added feature is the oiler "bob" which hooks onto the end of



the rod as it protrudes from the muzzle end, polishes and oils the gunbarrel for putting away. When the bushy rod becomes soiled it can be conveniently washed out in lukewarm water with mild soap and be as good as new. The Double W comes complete with separate oil bob bottle and sturdy leatherette case from W & W Mfg. Company, Box 365, Belton, Missouri 64012.

L.L. BEAN, INC. now has available for the well-dressed hunter a series of new tie tacks that are imprinted with the tracks of popular game animals. Exact in every detail, the engraved replicas of deer, bear, grouse, and



rabbit prints are set into polished silver backgrounds. These handsome, modern reproductions are formed of solid silver by Sid Bell and hand finished. Priced at \$4.00 each, from L.L. Bean, Inc., Freeport, Maine 04032. WITTH GUNS

THE SMART HUNTER plays it safe indoors too by securing his guns and gear. One good way (and cheap too) is to get a ready-made or do-it-yourself Safe-Lock Gun Rack from Yield House. Their kit will take four longarms and has a large drawer for what-nots, both being locked by one key. Made of selected knotty pine in a variety of finishes, the 24"x28"x534",



pre-fitted, drilled and sanded kit costs nearly half the price and gives the handyman an opportunity to do up his own. Price \$21.50, assembled, express charges collect, or \$16.00 postpaid (add 75¢ west of the Mississippi), from Yield House, Dept. GM, North Conway, New Hampshire, 03860.

CAMPER-BACKPACKERS can find everything they need to know about selecting or making field equipment and clothing in the new fourth edition of "Light Weight Camping Equipment" by Gerry Cunningham and Margaret Hansson, Originally intended as an instructional book for making gear from scratch, this 130 page, illustrated soft-cover guide is invaluable to the buyer as well. Good points of construction methods and materials are set forth on tenting, packs, parkas, sleeping bags, and clothing with discussion of insulation, stitching, and patterns. Copies are available through leading retailers, bookstores, and direct from Gerry, P.O. 5544, Denver, Colorado, 80217, at \$2.50.

PENGUIN INDUSTRIES has developed a more potent, yet safer Pengun tear gas cartridge from DuPont's Delrin, an acetal resin providing the strength, resilience and resistance to gas permeation required for top performance of the cartridge. Researchers spent two years in developing the plastic cartridge which replaces the aluminum one in use since the introduction of the Pengun as a pocketsized self-protection device eight years ago. The new cartridge carries a larger charge of tear gas powder and is easier to handle than the previous aluminum type. Especially constructed to fit in a purse or shirt pocket, the Pengun is easily and quickly operated. According to a U.S. Treasury ruling, it is exempt from the Federal and National Firearms Acts. It is recommended for use by industrial security operatives and the like. Write Penguin Associates, Inc., P.O. Box 97, Wilmington Rd. Parkersburg, Pa. 19365.

WASH AWAY RUST and corrosion from valuable guns, tools, fishing reels, and camping equipment with the new non-corrosive B-P Rust Remover made by Dicon Products. This new remarkable concentrate is also non-toxic and non-allergenic, safe to use indoors, and completely harmless



to sound surfaces. It will not affect adjacent painted or wooden surfaces. This liquid-form shooters' aid goes a long way in the 8 ounce size available direct from Dicon Products, 2751 Carol Road, Union, New Jersey 07083, at \$1.98 plus postage and handling.

SHOPPING WITTH GUNS

CEASE FIRE they're not real crows they're just Trendecoy's new life size decoys done up in tough all-weather plastic that will never fade or change coloring. These realistic birds can be hung from a branch, placed on a tree limb, or brought down to earth by

REDFIELD GUN SIGHT Company has a new 1x-4x Variable scope available which offers an exceptionally wide field of view, appreciated by the brush and thicket game hunters. A sudden encounter in heavy cover can now end happily for the wily snapshooter. Even at lowest (1.22x) power, the field of view is a whopping 82 feet at 100 yards, 30 feet at top magnification. The new scope comes in a wide choice of reticle styles: me-



dium crosshair, 4P CCh, 4-plex, PCH, or 3"-1" dot. Shotgun slug shooters who have had their brow bruised can order this new scope with the "Magnum" eye piece, which gives up to 3¾" comfortable eye relief. The new scope also has beefed-up internal adjustments, positively sealed and enlarged to ease hand adjustment. The popular coin-slot feature also remains.

GOLD LODE is a new process employing a specially-developed processed gilt that lets you duplicate the art of a precious metals craftsman. This 23 karat real gold kit lets you inlay the engraving on all your guns easily. The Gold Lode kit contains enough materials to do up any engraved shotgun or several pistols. You can now add to the elegance and beauty of your prized guns for a mere \$12.95 outlay. The Gold Lode kit is now available at your gun dealer or from the maker, Gold Lode, Inc., Box 31, Addison, Illinois 60101. **RAYMO PLASTICS** now offers a line of hard styrene gun cases to fit single longarms or handguns and a special four-gun capacity model for pistols. All Raymo gun cases are designed to give complete protection for the shooter on the go with wood-grained exteriors of resilient styrene and deep-cushioned urethane interiors to hold your guns securely, safe from damaging bumps and knocks. In every model, a key lock with snap closure feature and extra-safe double handles make the Raymo cases favorites. Available in your choice of black or brown at low cost from sporting goods dealers; Raymo Plastic Co., 300 W. Park, Olathe, Kansas.

EDDIE BAUER'S has a new clasp knife for the well-outfitted woodsman called the Henckels "Hunter". This little slicer is the sort of knife an owner puts on the wall of his den when it's not in use because he likes to look at it. Ruggedly hand-crafted handles are of genuine cherry, oil finished to a ruddy patina tone and pinned with rivets of German silver.



The 3³/₄ inch high-carbon steel blade serves equally well in the trail tasks of skinning and boning and opens easily and remains securely locked open until the recessed trigger is released. A tough cowhide belt pouch that comes with it has a snap-closure and large protective flap. Order as #5748, postpaid at \$9.00 from Eddie Bauer, Dept. GM, Seattle, Washington 98122.



using a ground stake. The crow decoys can be had for \$14.95 per dozen postpaid. Larger great horned owl decoys of the same material are also available at \$4.95 from Trendecoy Company, Whitehouse, Florida 32095.

THE NEW "RIG-RAG" for anything that rusts is the latest item in the well-known Rig line of gun care products. This oval sheepskin wiper is impregnated on the woolly side with RIG-Universal preservative and is a hand-sized oval $9''x4'/_2$ " selling for \$1.00 at sports and gun shops. It is just the thing for keeping guns safe from the elements, whether in the workshop, hunting jacket, or gun case.

UTICA DUXBAK has introduced new hunting slacks named "Sportsters" at sporting goods and department stores across the country. Ideal for hunting and casual wear, they have elastic-backed beltless waist suspension and roomy cargo pockets.



Utica Duxbak "Sportster" slacks sell for \$8.50 in green poplin and \$9.50 in brown duck. For Duxbak's complete 1968 catalog, write the Utica Duxbak Corp., Utica, New York, 13502.

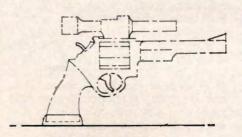
NEW PATENTS

By A. AUGUST TIGER

Patent copies of the product ideas described here are available from the government patent office at 50¢ each. It takes from 3 to 6 weeks to receive them. Should you want fast one day service, send the patent number and remit \$1 for each patent copy wanted to: A. AUGUST TIGER, Box 831, New York, N. Y. 10017.

Accuracy Shoe for a Pistol

To overcome the inaccuracies of recoil action in pistol shooting, a resilient shoe has been designed to fit the butt end of a pistol. When rested on a rigid surface, the resilient shoe is responsible for improved marksmanship. The recoil force from the exploding shell is absorbed by the rub-



ber or neoprene used for the shoe. The shoe has a thickness of approximately $\frac{1}{4}$ " at the bottom. The sides taper from a thickness of approximately $\frac{3}{46}$ " at the bottom to as little as $\frac{1}{46}$ " at the top. The entire shoe is little more than $\frac{1}{2}$ " high.

Patent No. 3,384,988 has been obtained by Urvano A. Salaiz, 4295 Tehama Avenue, Fremont, Calif. 94538.

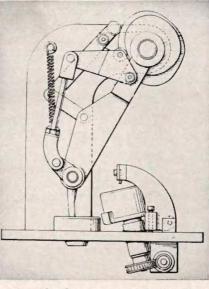
Powder Measure for Loading Cartridges

Offers a simpler more convenient procedure for a change-over from measuring relatively large increments of powder for rifle cartridges to measuring smaller increments of powder for pistol cartridges. Finer adjustment of the increments of powder is made possible by a simple rotation of the screw threaded plunger. A convenient and expeditious procedure is provided for completely emptying the hopper when it is desired to change over from one grade of powder to another without leaving the slightest residue. All parts are quickly and easily dismantled making it completely accessible for thorough cleaning. This is especially true of the working parts of the device.

Patent No. 3,386,329 has been awarded to Herbert E. Rohrbacher and assigned to Bergandi Manufacturing Co., Inc., El Monte, Calif.

Automatic Powder Scooper

Heretofore, it is claimed, sensitive powders have always been handscooped using specially designed scoops to meet a required weight charge. Use of such scoops left much to be desired due to deviations in the weight charge resulting in variants such as the human factor, inconsistent particle size, etc. This new scooper, while small in size, can be adapted to

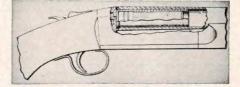


existing loading equipment. It eliminates the labor factor and provides more uniform reliability or repeatability of the charge. It includes an open top receptacle with the scoop moving toward and away from the receptacle on a horizontal plane and discharging in uniform controlled amounts.

Patent No. 3,383,020 has been granted to J. H. Cargile and assigned to Day & Zimmerman, Inc., Philadelphia, Pa.

Shotgun Bore Reducer

This development may advantageously be utilized in conjunction with either a break action breechloading shotgun or an automatic shotgun. It is provided with a magazine feed which facilitates utilization of the gun to automatically fire shells of a gauge smaller than normally used. Designed to fit within the shotgun bore to be reduced, in a manner that would effectively minimize the possibility of undue vibration, rupturing or distortion in use. The shotgun bore reducer is placed within the shotgun barrel extending from the breech

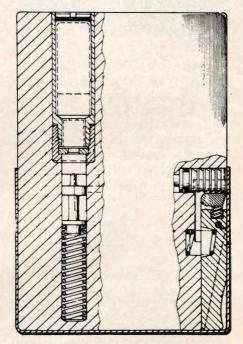


along the entire length of the barrel and projecting slightly from the muzzle. This facilitates release and precludes the possibility of affecting the inner surfaces of the barrel when firing shells smaller than normally used.

Patent No. 3,384,989 was issued to Thurman R. Thomas, 421 Wright Street, High Point, N. C. 27260.

Launcher for Flare & Smoke Signals

The size of, or even smaller than a pack of cigarettes housing both the flare of smoke signalling material and the spring loaded mechanism activated by a hand operated trigger or release ring. It is fitted with a safety



device to prevent accidental discharge. The device comprises a minimum of parts, is easily assembled and can also be loaded with tear gas cartridges, bird shot, etc.

Patent No. 3,385,163 has been awarded to Nicholas Kotikov, 3132 Unruh Avenue, Philadelphia, Pa. 19149.



ARMS LIBRARY

HISTORY OF AMERICAN SMALL ARMS AMMUNITION

By F.W. Hackley (MacMillan Co., N.Y., 1967. \$25.00) Ordinarily, I would not advise anyone only generally interested in guns to pay \$25 for a book on military cartridges, but this book is the exception. First, however, let me say that this volume covers military ammunition from 1880 through 1939. As far as I can tell it is rather complete, it gives all of the technical data you would imagine a book of this sort should have, and the drawings and other illustrations are excellent. With all of this, then, there is little doubt that it should be on the shelf of every ammunition collector, military historian, and serious cartridge technician. But I said that even those only generally interested in guns and shooting would find this book worthwhile; let me explain. The historical portions of this book make mighty interesting reading. I first thumbed through the book, expecting to find a lot of highly technical words and phrases, only to catch a glimpse of a paragraph which told of some overloaded .45 auto cartridges which slipped by the Frankfort Arsenal, and how the Army went about "roll testing" suspected lots. As I went further into the book, I became intrigued with the test results of some of the experimental ammo, and from then on I was hooked. I think you'll be, too.-J.R.

THE COMBAT BOOKSHELF

(Normount Armament Co., Forest Grove, Oregon)

This invaluable series of references consists of collected reprints of longout-of-print or otherwise scarce works such as technical manuals and catalogs devoted to military armaments and procedures. Since its inception in 1966, this line of paperbound editions has developed and added many interesting titles. The latest issues include *AR-15*, *M-16 and M-16E1 5.56mm Rifles* about the family of light automatic rifles currently very much in the public eye and in extensive use in an ever-growing number of areas, the Reising Submachine Guns volume which tells the story of the also-ran rival of the Thompson as used by the Marines and many law enforcement agencies, Johnson Rifles And Machine Guns which treats both civilian and military models of the remarkable, advanced, and unsung hardware favored by Marine raiders and paratroops and some Army special troops, a very thorough reprint of the U.S. manual on the German M.G.34 light machinegun which covers the weapon and appurtenances down to repairs and an identifying glossary on ammunition, accessories, and German nomenclature, and an intriguing collection of descriptions, drawings and sundry technical data on Firearm Silencers in all their many forms. All editions sell at very reasonable rates and the military enthusiast should be able to put them to good use. A complete, up-tothe-minute catalog of all the Combat Bookshelf publications is available from the publisher .--- J.A.

THE HANDBOOK OF HANDGUNNING

Paul B. Weston

(Crown Publishing Inc., N.Y., N.Y., \$4.95)

Paul Weston is one of today's better known shooting writers who doesn't do all his powder-burning from his desk. This volume is devoted to taking the neophyte or semi-experienced shooter through all the steps necessary to become a proficient handgun marksman. There are no pages spent on history, handloading, gun collecting, or the like. The entire book is devoted to programs of instruction and practice that have been developed by the author in teaching marksmanship over a period of many years. He does, in fact, teach this subject at Sacramento State College.

Weston feels that no less than 90 days are normally required to make a competent marksman out of the average adult, so he has developed a comprehensive training program to be followed for that length of time. He doesn't believe in pushing students too hard, and this program requires only several hours each week, usually spread out over three range sessions. It involves plenty of shooting, with emphasis on self-determination of faults and self-discipline to correct them as they are discovered. The coach-and-pupil method is also recommended.

Weston's methods are not devoted to simply producing paper punchers. Considerable emphasis is placed upon double-action and hip shooting. Also, the manner in which the handgun must be used for offense and defense.

All the major factors contributing to handgun accuracy are discussed in detail, with plenty of stress on uniformity and constancy. I don't feel anything has been overlooked in this book and the author has done a most excellent job of putting his instructions down in simple, concise language, easily understood by virtually anyone.—G.N.

FACTS ABOUT TELESCOPIC SIGHTS

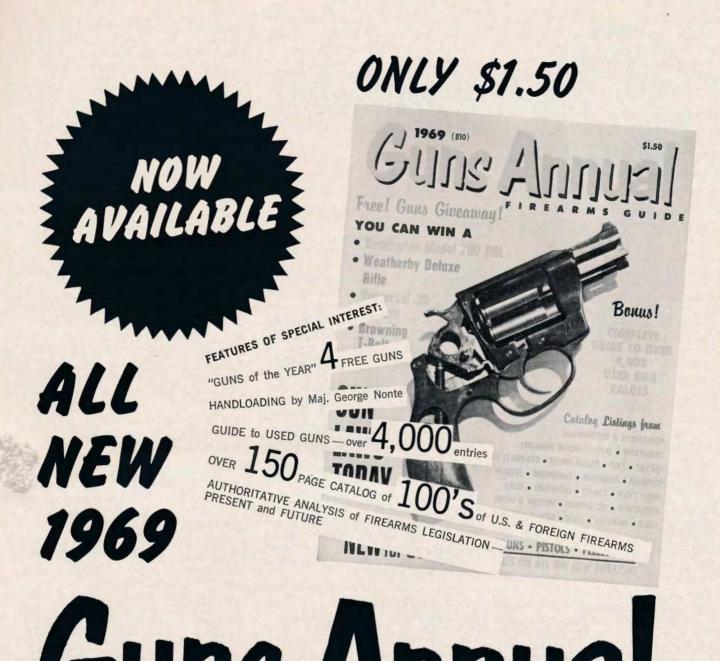
A good many years ago, the Bausch & Lomb optical people put out a very good handbook on scope sights. Since that time, there have been reasons to update that useful publication. Consequently, we have at hand the latest edition, fresh off the press and complete with attractive full-color soft cover.

In the beginning, this book dwells on "Marksmanship, An American Heritage," and outlines the developments in arms, ammunition, and sights that have produced today's superb accuracy and killing power. Included is a necessarily brief history of the use and development of the telescopic rifle sight.

The telescopic sight is discussed in detail, in layman's language, with explanations of the functions of all basic parts and components. Characteristics of a good scope are defined in detail. Much of the confusion existing about eye relief, brightness, light transmission, coatings, etc. is stripped away.

Other subjects covered include scope installation, doing your own scope testing, and, of course, the current line of Bausch & Lomb scopes and mounts. The last portion of the handbook contains their specifications and a mount selection chart.

Bausch & Lomb will send you this handbook for a mere two-bits (25 cents) and unless you're a bona-fide expert on the subject, that's the best offer you've had this week.—G.N.



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ROBERTS ABELS 51 P. O. ACKLEY'S 58 AIR PISTOL 15 ALASKA SLEEPING BAG CO. 49 AUSTIN BOOT COMPANY 51 BADGER SHOOTERS SUPPLY 6	HANDGUN PRESS 58 HARRIS ENGINEERING 69 HERRETT'S STOCKS 8 HERTER'S, INC. 54 HIBBEN KNIVES 12 HOOSIER MACHINE CO. 65 DON HUME LEATHERGOODS 57	PACHMAYR GUN WORKS, INC. 17 PANTHER PUBLICATIONS 52 PENDLETON GUN SHOP 57 PETERSON MACHINE CARVING 52 PEZZINI 61 A. H. POPPER 53
BENJAMIN AIR RIFLE 6 BILL'S MILITARY STORES 58 SETH BIRDWELL CUTLERY 65 E. C. BISHOP & SON 53 BO-MAR TOOL & MFG. CO. 54 ELDON BRANDT & SON 53	HUNTERS LODGE Cover 3 HUNTING WORLD, INC. .64 IMPERIAL ARMS CORP. .51 PAUL JAEGER INC. .59	RCBS, INC. 13 RAYMO PLASTIC COMPANY 53 REFORESTATION, INC. 69 MARTIN B. RETTING, INC. 67 RICE GUN PRODUCTS 53
BRECK'S OF BOSTON	JET-AER CORP	S & K MFG. COMPANY
CENTURY ARMS, INC	L. A. DISTRIBUTORS	SHERIDAN PRODUCTS, INC. 7 SHOTGUN NEWS 8 SIGMA ENGINEERING CO. 60 SOCIEDADE DE SA ^C ARIS DE MOZAMBIQUE. 61 SPEER PRODUCTS CO. 12
CONETROL SCOPE MOUNTS 53 D. CORRADO, INC. 10 COUGAR & HUNTER 67 CROSMAN ARMS CO., INC. 3	HARRY McGOWEN	SPORTS INC
STAN DE TREVILLE	THE MUSEUM OF HISTORICAL ARMS54 S. D. MYRES SADDLE CO	TRIPLE K MFG. CO
REINHART FAJEN	NATIONAL RIFLE ASSOC	W. R. WEAVER CO
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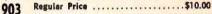
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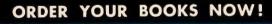
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