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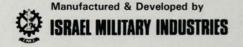
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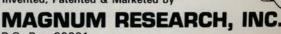


Finishes include: (left to right) bright nickel, standard black, satin nickel, polished & blued. Six other finishes also available.

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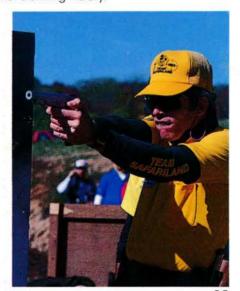
MAY/JUNE 1989

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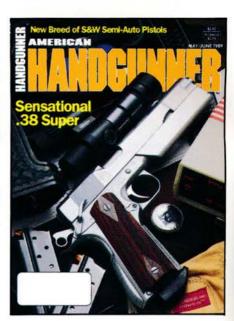




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Before you buy a shooting timer take the time to do a little research. Call the different manufacturers and get their literature. Compare each timer feature for feature and watch out for bizarre operational limitations, like the inability to review shots when using a PAR time or the requirement for two machines to run a Man vs Man event. You'll find that dollar for dollar and feature for feature the PACT MKIII gives you more honest "bang for the buck" than any other shooting timer on the market.

SPEAK OUT

With any luck, I'll be the only person in the world armed with the great Beretta 92.

> S.L. Balloga Meeker, Colo.

Beretta vs. Colt

As a military veteran, life member of the NRA and active competition shooter, I would like to respond to Mr. Bob Bonaventure, VP of Beretta USA (see *Speak Out*, Jan/Feb '89).

Bob, I own several Colt 1911 pistols, both military and civilian styles, and some have had at least 40,000 rounds through them. Bob, no broken slides yet.

American Rifleman did a comparison of the Beretta 92F and the Colt 1911 and concluded yours was of inferior accuracy. In fact, about the only thing going for the 92F is its magazine capacity.

I see very few Berettas in competition and the last Beretta diehard in our pistol club just switched to a Colt 1911 and is enjoying excellent accuracy with it. He has confidence in his Colt, something he never had in the Beretta.

Now Bob, how does that translate to the G.I. in the field or the cop on the beat? In a life-or-death situation, the trusty spaghetti pistol at your side, you wonder: did the armorer check this thing or will I put a hole in my head with the slide? Also, with its moderate accuracy, will I hit what I aim at?

After first-hand experience with both the Beretta and the Ruger P-85, if the Army picks the Beretta as the new M-10 pistol, it will prove that the G.I. is considered an expendable commodity.

C.M. Kerns Monroe,La.

The Great Beretta 92

Please, please, please continue your disinformation campaign on the Model 92 Beretta. My reason for this is simple:

The more bad press, the greater the perception that the Model 92 is a bad pistol. The greater the perception, the less demand. The less demand, the lower the price. The lower the price, the better the chance of buying two more!

The only time my 92 has ever failed to fire (after thousands and thousands of rounds) is when I *purposely* feed incredibly weak handloads. Then it was only 75% reliable.

So, guys, please keep up the poor work.

If Ya Pays Peanuts, Ya Gets Monkeys

I have followed the saga of the Beretta 92 (military M-9) pistol with considerable interest including Congressman Brooks' press release on the subject in the March/April 1989 issue. Beretta sells this pistol to the military at comfortably under \$200 a copy. Sadly, it seems the US military has, as they say, got exactly what it paid for.

Shawn R. McCarver Flat River, Mo.

Test, Test, Test

What is this 9mm test, test, test? I think we are beginning to get the picture: probably about 10,000 highly paid (by now) military and industrial jobs are dependent on this *one* test.

I can see it now— this 9mm test won't even have a decision before all the bad guys have us out-gunned anyway, maybe with lasers or liquid propellant or something.

What we've got instead of designing

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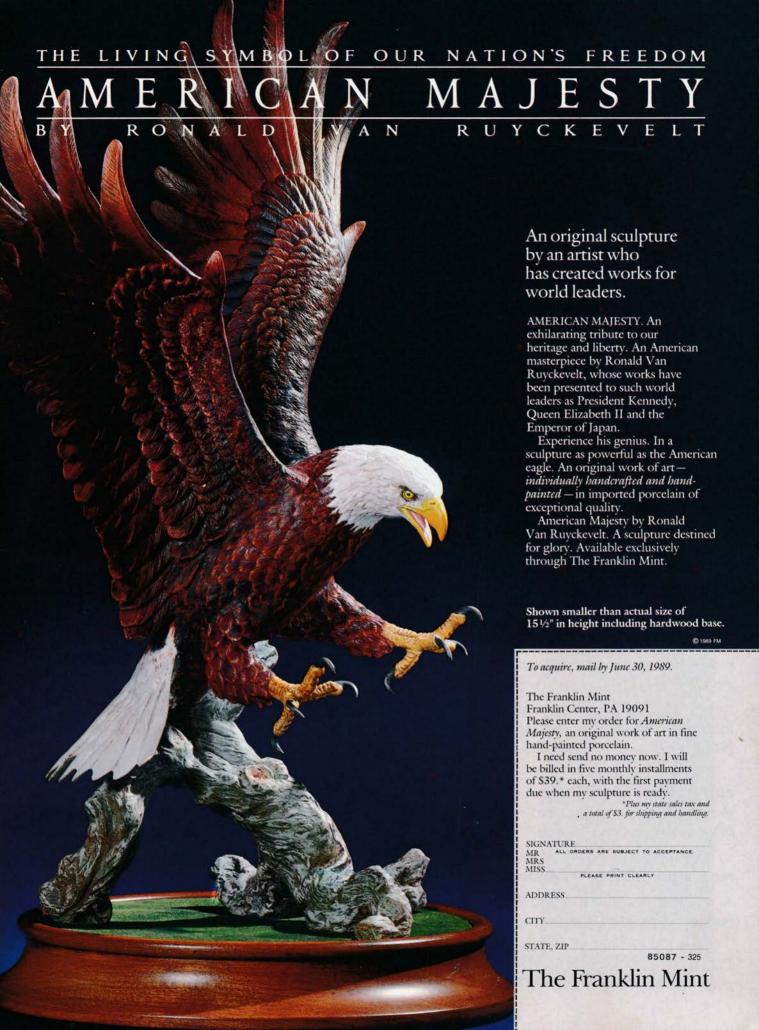
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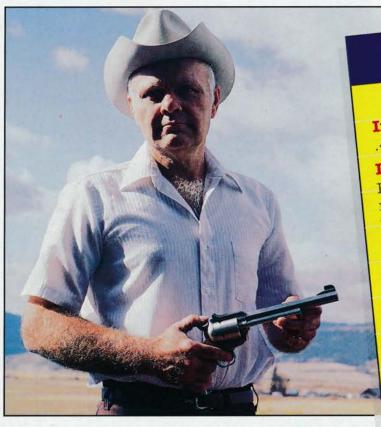
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While it is true that Mr. Casull does read American Handgunner to stay in the forefront of handgun design technology it's also true that he reads it for another more important reason.

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and advancing weaponry is the gun companies with half their staff in Washington to lobby, play politics and bitch about "foreigners."

If any of us are so naive as to think that this 9mm test will bring out the best, please note: Sig-Sauer ain't even there.

> Jim van Doren Anchorage, Alaska

Tax Payer Upset

I would like to thank you and the staff of American Handgunner for publishing such an interesting magazine. Simply put, I think American Handgunner is superb and the most informative on the market today.

In the March/April issue, the *Speak Out* column has two letters to the editor of interest to me, "Latest on M-9" and ".45 Fan." I would hope our government would want to provide our military with a weapon better than the 9mm Beretta. The more people are made aware of this problem, maybe, just maybe, some may start asking why. An army with an inferior weapon is a liability!

I personally do not like my tax money wasted on junk equipment. How long will it take to finally realize the 9mm Beretta is not a good choice for our military?

H.T. Raney Raleigh, NC

(Editor's note: see Massad Ayoob's Cop Talk column on the Beretta, "Beretta-Bashing Is Unfair.")

Thanks Loads

I would like to commend Mr. Bill Keyes, special order supervisor of RCBS, for the fine job and efficient work in making special dies for my XP-100 handgun and its wildcat cartridge, the 6mm LRC.

I have never seen a finer job on dies since I've been handloading. If anyone has any questions pertaining to special dies, you can reach Bill at 800-533-5000. All I can say is thanks loads, Bill!

Michael Rinaldi Eynon, Pa.

How I Ignored Laws and Morality

I have been amused for many years by Col. Charles Askins and his unique style of expression. But I was dismayed after reading "Colonel Askins and his Fighting .45" in the March/April issue. A better title might have been How I Ignored Regulations, Laws and Morality for 50 Years and Got Away With It.

The people of the United States hold army officers to a much higher standard of behaviour than Col. Askins demonstrated. Col. Askins has had far more experience with firearms and combat that I will ever have, and I would not presume to Monday-morning-quarterback him.

However, this article belongs in one of the mercenary rags, not in a magazine that presents quality reporting of the handgun scene.

> Richard F. Colarco Omaha, Neb.

Askins or Manson?

I hope to never see another article of this kind (March/April 1989) by the colonel, or anyone else, again. I had to listen to this type of garbage years ago when I was a public defender.

Perhaps you will at least let your read-

ers know when you intend to make publish someone more like Charles Manson than Charles Askins.

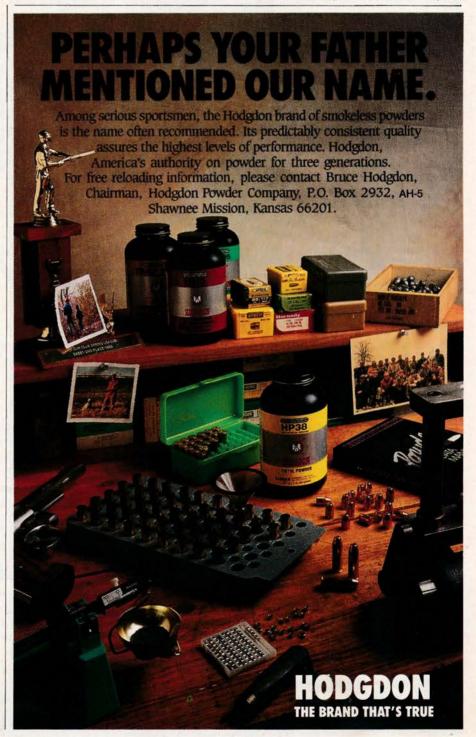
Paul H. Vallandigham Urbana, Ill.

More Askins

I really enjoyed Colonel Askins story in the March/April issue, let's have more.

It's too bad the police are hamstrung by the civil rights laws. We would all be safer if they could handle criminals, as Askins did.

If they want to eliminate the drug problem, let the police split the cash that they catch on the dopers. After all, they are





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lisplay at your local Hornady dealer.

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the ones putting their lives on the line. Robert J. McCabe Bensenville, Ill.

Horse's Ass

The name Charles Askins once carried a great deal of respect with it. Serious shooters could rest assured that when Charley wrote something, it was well thought out and completely reliable.

But now it appears Askins is enjoying his last years yukking it up about all the people he's shot or killed. He writes much less like a firearms authority we could always count on and much more like a homicidal horse's ass.

> Dave Workman North Bend, Wash.

Concerned for Gun Owners

Being almost exclusively a handgun hunter, I particularly favor American Handgunner. Within the last month, though, I realized that the one thing I didn't like about your magazine was your lack of emphasis on firearms legislation and the gun control fight.

Then today I received my March/April issue and find you have added Gun Legislation: The NRA Report to your regular columns. Thank you so very much for recognizing and responding to this need. I am very concerned for sportsman and gun owner rights in our country and around the world.

> James H. Whitlock Brevard, NC

Cop for Coonan

Being a police officer who carries a Coonan .357 semi-auto on duty, I was surprised to read in your March/April issue's Cop Talk column that Massad Ayoob thinks that "the .357 Magnum round is a revolver-only proposition for practical

Although the Coonan isn't widely used, it is still an excellent duty weapon. Any officers who want to have the power of the .357 but likes a semi-auto should consider

the Coonan.

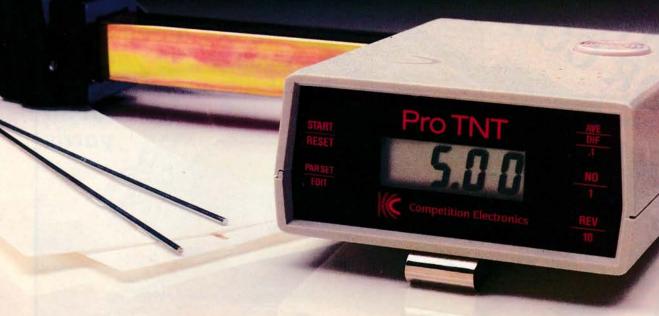
M.E. Riley Sioux Falls, S.D.

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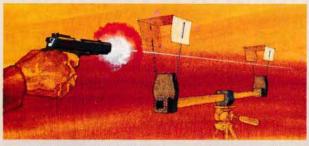


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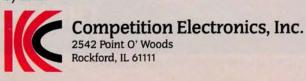
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LEATHAM'S COLUMN

ROB LEATHAM

THE YEAR IN REVIEW: LEATHAM SCANS THE MATCHES ON THE HANDGUN CIRCUIT IN 88

Here we are at the end of 1988's shooting season and already the new challenges of 1989's professional handgunning circuit are on the near horizon. As I look back and reflect on the 1988 shooting year, several things stand out in my mind, some satisfying, some not. But when taken as a whole, 1988 was belly, belly goood!

The season begins, customarily, with a regional match or two before the circuit really gets rolling. The FIPT, a fine IPSC match down in the Sunshine State, starts the year off with the top practical shooters gathering in warm Florida to shake off the winter chill, a "warm up" in more than one sense. We get the old trigger finger limbered up at this February shoot for The Big Matches soon to come.

The first major tournament on the tour is the Steel Challenge in early April. Held in the cradle of practical shooting's birthplace, the Steel Challenge in balmy southern California is always a favorite of mine.

Last year Chip McCormick became the only shooter to ever win the Challenge twice. This now leaves only The Masters as the last match with nothing but solo champions. Attaboy, Chip!

Next the professional handgunners roll up their shooting bags and head for the Bianchi Cup over Memorial Day weekend in late May. We trade in our autoloaders and Shooting Star magazines for wheelguns, Aimpoints and speedloaders. We saw a command performance from back-to-back winner John Pride in 1988 with a near-perfect score. Three shooters went into the last stage of that match with "possibles" so it was exciting to see John triumph in the face of incredible pressure.

Incidentally, I hear that my old friend and former nemesis Mickey Fowler is gearing up to rejoin competition shooting for the 1989 Bianchi Cup. He's the only man to win the match three times with—even more impressive—consecutive titles. I look forward to shooting against

Mickey again.

Last year was my first opportunity to take in the Second Chance bowling pin shoot, a funfest of shooting excitement in Central Lakes, Michigan. This match, always held in June, is not a regular stop for me on the tour, but it proved to be an interesting detour. And if you're looking to throw in some socializing with your shooting, this is definitely the place to be as food and drink are included in your entry fee. (Some bemoan the passing of the FBI policy of Rich Davis. Free Beer Included used to be a highlight for the carousers, but Rich's lawyers just about had kittens over the liability troubles of giving away beer at a shooting match.)

There are many fun events in the Second Chance venue, but the Five Pin Event is the match that crowns the winner. The grand champion in 1988 is a phenomenal wheelgunner, Jerry Mikulek. This revolver shooter extraordinaire beat hordes of auto shooters in a game that is judged on speed and accuracy. Jerry was not only the fastest, but also the most consistent. If there's such a thing as reincarnation, Ed McGivern has returned.

Next stop, The Masters. Held in scenic Barry, Ill., in early August, The Masters is by far the richest tournament on the tour. The cash here is significant with the winner banking a cool ten grand, not to mention various "stage money" winnings. The 1988 Masters gave another kick in the pants to the young bucks like me when 56-



year-old Ken Tapp of Kentucky soundly trounced the field in what is generally considered a young man's game.

Ken has not been shooting on the circuit all that long, but he brings a wealth of experience and knowledge from a lifetime of handgunning. Which, of course, just goes to show that it's not always the years on the frame, but the hours on the engine that count. Ken is as sharp as they come.

Last year saw the biennial IPSC World Shoot in Caracas, Venezuela. Wonderfully run and very challenging, the World Shoot was nearly everything an international match can be except for the political matters of excluding one of IPSC's top members. I once again managed to win this one even though I did have a problem or two. But thanks to a tough course of fire spread over a full week of shooting, I was able to regain lost ground and successfully defend my world title.

Last stop on the circuit in 1988 was the IPSC Nationals in Barry, Ill., the same range that hosted The Masters a few months previously. The event was once more the work of the dedicated shooters from the Pike-Adams Sportsman's Alliance, the local gun club there at the PASA Shooting Park.

This is the best IPSC match I can remember— long shots, short shots, fast shots, slow shots scattered amongst a dazzling array of creative and clever props and courses. It was just what a national championship should be. This was win

number five for Yours Truly and was particularly gratifying since the rest of the year had not been too great for me, except the World Shoot. This one match alone made all the work and preparation of the year worthwhile.

There are a few regional matches at the end of the year to sort of prepare you for the long winter hibernation. One of my favorites is the West Coast Invitational, held in November outside Los Angeles. The 1988 WCI lived up to its billing as "twisted, devious and totally off-scale" with night matches in the daytime (you wore a welder's helmet to simulate darkness), a stage shot while dangling in the air from a parachute harness and a stage with so many gasoline drums strewn about that I thought I was in Saudi Arabia. You never know what the diabolical minds of the West Coast organizers will think of next, but you can be sure it'll be a match you won't soon forget.

And now the year is past, but as I sit here and write this, reflecting on the year, I have to conclude that it was a great year. Hell, I spent the whole time either shooting or being around guns so it has to be good. I can think of nothing I would rather do than shoot and no group of people I would rather be around than shooters.

I want to thank each of you who competes in matches, big and small, local and national, "on the circuit" or off. Win, lose or draw, we are all brothers who share the same reason for being there. You and I, we both love the sport of handgunning and we both thrill at the excitement of the matches.

I would also like to congratulate the winners of 1988. And to those who fought the gallant fight and tried to win, congratulations for putting forth the effort and showing the dedication to participate. Who knows what might happen for you in 1989. This time next year I might be writing about you instead of Chip McCormick, John Pride, Ken Tapp and Jerry Miculek.

Enjoy your shooting, and I'll see you at the matches.



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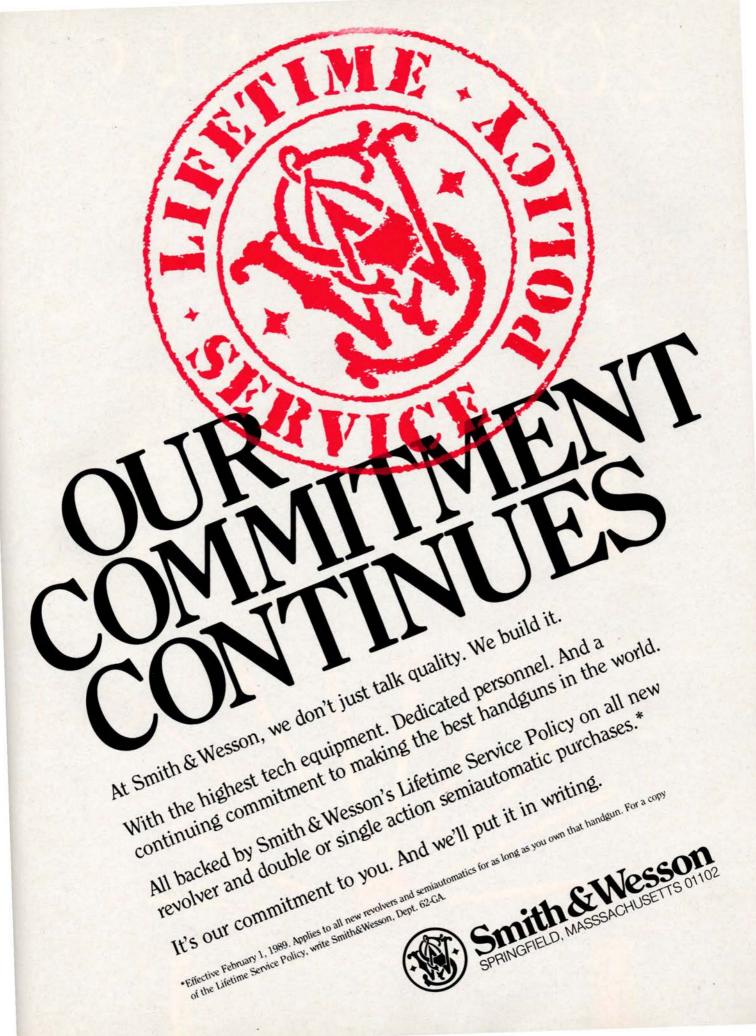
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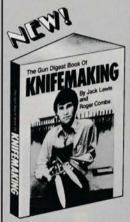
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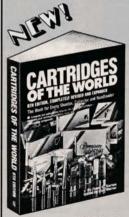
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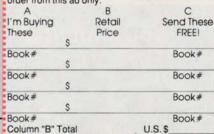
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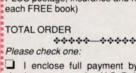
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INSIGHTS INTO IPSC

DAVE ANDERSON

HOW TO IMPROVE SHOOTING SKILLS: KEEP A LOG OF PRACTICE SESSIONS

Most handgunners, whether competitors or not, would like to feel that their shooting abilities are improving as time goes by. For the shooter who is serious about becoming a better shot, one of the cheapest "accessories" is also one of the most useful. It is simply a loose-leaf notebook in which are recorded the results of every match and training session.

Olympic-class competitive shooters consider a shooting diary a standard piece of equipment. Bill Pullum and Frank Hanenkrat, in the classic book on competition shooting titled *Position Rifle Shooting*, state that "a beginning shooter will derive considerable benefit from a diary... but the person training for a world record will find it absolutely essential."

Rob Leatham, 3-time World Champion and 5-time U.S. Champ, agrees that keeping records is important. "Without records there's no way to know how much we're improving, or what areas need work. A lot of people trust to memory, but the problem is that memories tend to be selective and poor performances are quickly forgotten. People go out and do a hundred draws and remember only the fastest one. That doesn't tell you anything. You have to know what you can do on demand," Leatham observed.

What you get out of a shooting log depends largely on what you put into it. At a minimum it should include the date and time of day; location; weather conditions; the objective of that training session, stated as specifically as possible; how you plan to achieve the objective; the results of the session; and an evaluation, indicating what progress was made and what the objective will be for the next session. I think it's also a good idea to note the cartridge loading data, and (if you use more than one) the gun being used.

A diary such as this, carefully maintained over a period of time, helps in several ways. For one thing, it forces us to think about what we're doing. All too

often we go to the range and blaze away with no clear idea of what we're trying to accomplish. We do a few draws, maybe some 50 yard shooting, run a few El Presidentes, practice some reloads.

Are we any better than we were a week ago, or six months ago? How much better? What areas need the most work? Try this: think about your last practice session and ask yourself, "What was I trying to achieve? What progress did I make? What should I do at the next session?"

Secondly, a diary allows the shooter to experiment, to evaluate a change in technique or equipment and make an accurate assessment of its effect. Without a known performance base, it's impossible to decide with confidence whether a slightly different stance, or holster position, or drawing technique is a help or a hindrance.

Obviously in this sort of experimenting the shooter should change only one thing at a time. If we switch from a .45 to a .38 Super, change from a strong side holster to a crossdraw, and shoot with the support arm straight rather than bent, and the scores are better (or worse, for that matter) there's no way of knowing what factor caused the change.

Records serve as a continuous check on both performance and equipment. For example, I usually start and finish a practice session with 10 careful shots at a 50 yard IPSC target, for a maximum of 50 points. If the scores should drop suddenly, it could mean a bad batch of bullets, or that



the sights have been knocked out of alignment. A slow decline in scores over a longer time period could mean the gun is due for a tuneup. Of course, if further testing shows the equipment isn't at fault, then I have to face facts—the targets are dodging on me.

Carefully maintained records over a period of time can increase confidence in your shooting skills as well as in your equipment. Shooting is no different than any other acquired skill. When starting out, a certain amount of training results in a substantial and noticeable improvement in ability. As the skill levels increase the same amount of effort gives progressively less and less improvement.

The competitor should realize that once the basics are acquired, improvement isn't going to come in big, dramatic breakthroughs. It comes in little bits-a few hundredths off the draw, a bit less time between targets, two or three more A's

instead of C's in a 100-round match.

Those little bits add up.

Look at the Steel Challenge, where the competitor will fire 39 series of shots at the targets, of which 31 count for score. If he can take 1/100 of a second off each draw, and the same amount on each move from target to target, he'll save 1.35 seconds by the end of the match.

The difference between first and second place in 1986 was .91 second. In '87 it was .72 second.

When your records show that your performance level is increasing steadily, even a bit at a time, it can be a real confidence booster.

IPSC and action-shooting competitions measure both accuracy and speed. Accuracy is measured by scoring the targets, but to keep track of speed the serious competitor really needs an electronic timer. The old whistle-and-stopwatch method of timing a draw or reload is so inaccurate as to be virtually useless, unless you really like kidding yourself. A timer will show the time for each shot fired with an accuracy of 1/100 of a second, and it should have review capability so the times for each shot and differences between shots can be checked. Any course of fire, from a one-shot draw to a complicated assault course, can be reviewed and analyzed.

In a telephone conversation recently with Jerry Barnhart (winner of the 1987 IPSC U.S. Nationals and the Steel Challenge) the subject of timers came up. Jerry said emphatically that, "A timer is the best shooting friend you have if it's used properly." Barnhart uses and recommends the PACT Mk. III timer with the optional printer, and especially likes the convenience of getting an immediate printout of every string of fire.

He commented, "When training for a match I use the printer to record each practice session. Later, I'll sit down and analyze the results. I look for any way to save time, whether it's on the draw, on the splits between shots, target acquisition,



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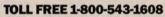
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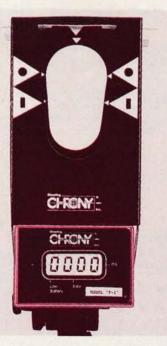
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and so on. Then I try and practice under all sorts of conditions and check those times. I want to know what I can do if it's unusually hot, or if it's raining and my hands are cold, or if I'm tired from travelling or just not feeling sharp. No matter what happens at the match I want to know how hard I can push under those circumstances.'

The PACT Mk. III currently costs \$279, and the optional printer is \$125. For another \$49, PACT will fit the timer with a chronograph module and supply a set of skyscreens, giving the buyer a full-featured chronograph and timer in one package. (A bracket for mounting the skyscreens can be purchased for \$24.) My IPSC club and several of my shooting friends own PACTs and they are a quality product in every respect. A brochure is available for \$1 by writing PACT, P.O. Box 531525, Dept. AH, Grand Prairie, TX 75053 or you can order by phoning 800-PACT INC (in Texas, 214-641-0049).

Another manufacturer of high quality timers is Competition Electronics. Their Pro-Timer III provides all the needed features-par times, instant or random delay start, an input jack for stop plate detection, and full review functions. Current list price is \$225. The Pro TNT has all the same features plus chronograph functions (including statistical summary and review) and comes complete with skyscreens and mounting bracket for \$325. I've used a Pro TNT model for a year now and like it a great deal. For information write Competition Electronics, Inc., 2542 Point O'Woods, Dept. AH, Rockford, IL 61111, or to order phone 800-222-3845 (in Illinois, 815-877-3322).

One feature I'd like to see available is a statistical summary function for the timer mode, similar to the statistical functions provided by the chronographs. It would be convenient to be able to do a series of draws or reloads and then review each individual draw, the average, standard deviation, and so forth. But even without this feature a timer is one of the most useful items you can buy.

In the Sept./Oct. 1988 *Handgunner* this column covered some of the benefits of obtaining coaching from a qualified instructor, and listed some of the bestknown shooting schools. Subsequently I found that Jerry Barnhart is now instructing on a regular basis, and called for further information. Jerry advised that he is currently booking two day (16 hour) classes for a maximum of six students per class. Class size is kept small to allow time for individual instruction, with all teaching by Barnhart personally.

Classes can be held on his own range, or if facilities are available, he will travel to your area. He's also planning some Steel Challenge classes at his range. For course dates and tuition fee information. write: Barnhart Unlimited, 526 Apartment C, West 14 Mile, Clawson, MI 48017 or call (313) 435-2454.

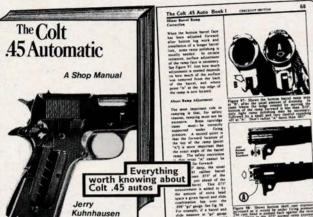
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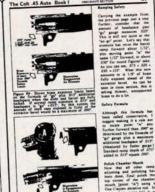
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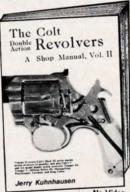
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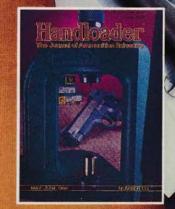
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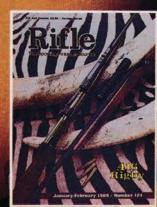
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SILUETAS

JOHN TAFFIN

ELGIN GATES, FATHER OF SILHOUETTE, DIES AT 66 BUT HIS LEGACY LIVES ON

One evening in 1982, I received a surprising phone call. The unfamiliar voice on the other end identified itself as belonging to Elgin Gates. I had been silhouetting long enough to know that Gates was president of IHMSA, and I also knew him by reputation as a world wide big game hunter, one whose exploits I had eagerly devoured in issues of *Outdoor Life* during the 1950's.

As a teenager I was fascinated by his hunting stories, little knowing that he would someday be a special friend. That first meeting by phone was the result of Gates reading articles I had written for *The Sixgunner*, the members' magazine of *Handgun Hunters International*.

A new cartridge had just been designed and Gates asked me if I would like to help develop some loading data for it. I had a difficult time answering very calmly— of course I would! That was the beginning of a too short friendship.

Elgin Gates, who had just turned 66, died of a heart attack on November 17, 1988

Gates lived the life that most can only dream of. He was blessed with a father who shared and encouraged his early love for firearms. After serving in the Air Force in WW II, Gates decided to become a speed boat racer. For the next 10 years, he garnered over 400 trophies setting 26 United States, International and World records. For a period of seven years, he was named annually to the All-America Racing Team.

Switching to shotgunning, Gates won 17 National and International Championships and has the distinction of being the only civilian to defeat every member of the United States Armed Forces teams. He also served as Captain of the 1973 International Trap Team.

As a big game hunter, Gates hunted all of the world's continents with 230 trophies listed in the record books and, in 1960, he received the Weatherby Award for his outstanding accomplishments as a big game hunter. In 1978, Gates was inducted into the Big Game Hall of Fame for lifetime acheivement in the sport.

To handgunners, Elgin Gates is best known for his contributions to silhouetting. Many would say that Elgin Gates is IHMSA (International Handgun Metallic Silhuette Association).

Gates was a participant in the first handgun silhouette match, organized by Lee Jurras and held in Arizona in 1975. That match planted the seeds and the first

IHMSA sanctioned match was held in April of 1977.

Gates has dedicated himself to IHMSA since that time serving as both president of IHMSA and editor of *The Silhouette*, official membership publication of IHMSA. Because of his dedication to the sport of handgunning, Elgin Gates was voted Outstanding American Handgunner in 1987.

I believe that silhouetting would not have enjoyed the tremendous success it has over the past 10+ years without the strong leadership of Elgin Gates. He lived, ate and slept silhouetting, strongly promoting it in every way possible and providing guidance to local clubs as they started a network of silhouette clubs and ranges all over the country and the world.

He is directly responsible for the setting up of two ranges, both in the east and in the west, for the holding of the silhouette championships, The Internationals, each year.

One of the reasons for the success of silhouetting has been Gates' insistence from the beginning that silhouetting not become an equipment race. The Unlimited category was set up for those who want to go all out, but the Production, Revolver and Standing categories are all designed for out-of-the-box handguns. All through the years, Gates has insisted that silhouetting remain a family sport that could be enjoyed without spending vast sums of money.

Two firearms companies certainly owe much of their success to IHMSA and silhouetting. Those companies are Thompson/Center and Dan Wesson. Both of these handgun makers saw the potential in silhouetting and began an unofficial partnership with silhouetting that has benefitted both parties.

Ideas that Gates had for long range handgunning fell on deaf ears as far as the other firearms companies were concerned, but T/C and DW listened and the result is better equipment for silhouetters and other handgunners as well.

Even before silhoutting really began, Gates had made up prototypes of the SuperMag series of cartridges. As silhouetting became more popular, shooters found that the .357 Magnum would often come up short. Gates early had the idea of a .357 with the ability to deliver the power of the .44, but with less recoil and flatter trajectory.

To come up with brass for the new .357 SuperMag, Gates heli-arced two .357

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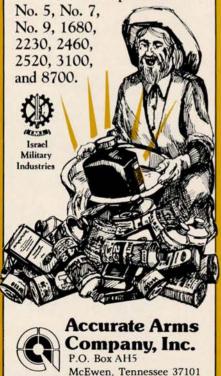


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cases together and trimmed them to length. Although they only stayed together for one firing, it was enough to give the desired results.

In 1975 Gates started his quest to interest a revolver maker in the idea of stretching the frame to allow a cylinder length of 2.075" to accept the new cartridge.

Gates settled on a length of 1.610" for the new SuperMags in .357, .375, .41 and .44, and Dan Wesson made up their first SuperMag in .357 in 1983. United Sporting Arms also came through with the chambering of their Seville single action in .357 SuperMag.

Ruger's version, the .357 Maximum, surfaced with a shorter cylinder. Gates insisted that the stubby cylinder is the reason that the Ruger Maximum ran into problems. The cylinder had to be long

short. I was privileged to do much early work with this cartridge, a .30-30 necked to 7mm, in both 10" and 14" T/C Contenders and the Wichita.

Like every other editor worth the title, Gates, with my first assignment, gave me the perfect advice: "Tell it like it is." With his encouragement, I did considerable testing of the 7R using both .30-30 and .375 Winchester brass plus the use of .375 Winchester brass to make a stronger .30-30 or as I called it then the .30-375.

After the .357 SuperMag and the 7R, I was privileged to work on the .375 SuperMag in both Dan Wesson and Seville revolvers, and custom Contender barrels. In all of the testing I did for IHMSA and *The Silhouette*, Gates was always very generous and always treated me with the greatest of respect.

What will the future hold for IHMSA? We can only hope for a strong leader.

enough for heavyweight 180-200 grain bullets, and the Ruger wasn't.

Since that time, the .357 SuperMag has gone on to become the most accurate long range revolver for silhouetting. Revolver silhouetters have set all major records with the Dan Wesson .357 SuperMag. Gates was right!

Gates did not stop there, the .375 SuperMag came next, again with the first guns being ordered by IHMSA. The newest SuperMag, the .445 SuperMag, came in 1988 just before Gates' death. And by the time you read this, the .414 SuperMag should be available, at least in prototype form.

There can be no doubt that without the persistence of Elgin Gates, none of these cartridges would ever have been brought into existence.

Always the experimenter, Gates came up with other protype handgun cartridges in the '70s, many of which are now factory cartridges. In addition to working with the SuperMag series, which also contained plans for a .45, .50 and .60 calibers, Gates designed single-shot cartridges on both rimless cases for bolt guns and rimmed cases for the T/C Contender.

Using parent .308 brass, eight IHMSA International cartridges were designed and carried out in .25, 6.5mm, .270, 7mm, .30, 8mm, .338 and .35 caliber. On .223 brass, silhouette cartridges were made in 6.5mm, 7mm, and .30 caliber. Later, for those desiring a 7mm in a T/C with more power than the 7 TCU, Gates turned to the .30-30 parent case.

That original phone call from Gates to me was to discuss the testing of a singleshot cartridge he had just designed, the 7mm International Rimmed, 7R for Just before his untimely death, I had told him that I had trouble getting Federal rifle primers locally. Two days later, a case of Federal rifle primers arrived from Gates for me to use in my testing.

Gates authored three books of particular interest to handgunners: The Gun Digest Book of Metallic Silhouette Shooting (1979), Shooting Steel (1986), and The Gun Digest Book of Metallic Silhouette Shooting, 2nd Editon (1988). The last two are available from IHMSA headquarters.

In all of his publications, Gates gave generous acknowledgements for the work of others and I feel particularly pleased to have made contributions for his last two books.

Like most strong leaders, Gates has his loyal followers and his vociferous detractors. The former vastly outnumber the latter. Also, like most men who are both creative and have strong personalities, some found Gates to be abrasive and closed-minded.

As one who has dealt with him over the past few years, I can again say that he always treated me with the greatest respect and even though we disagreed on two major issues— the "price ceiling rule" on production guns, and the use of scopes for long range silhouetting— we always managed to disagree agreeably. As a beginning writer, he was particularly encouraging to me in many ways. His presence in the handgun world will be missed.

What will the future hold for IHMSA? We can only hope for a strong leader, one who will set a course of seeking to cooperate with those involved in NRA Silhouetting and The Masters Tournament. We all need each other.

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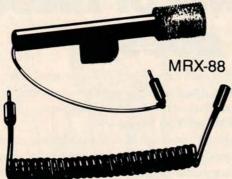
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BOOK REVIEWS

Successful Handgun Hunting, Phil Johnston, hardbound, 150 photographs, \$19.95 (plus \$2 postage), Shooting Sports Press, 4912 Arden Ave., Minneapolis, MN, 55424.

Did you know General George Custer was a handgun hunter? Did you know handgun hunting dates back centuries to Europe?

Phil Johnston traces the history of handgun hunting and brings you up to date on this fascintating sport with the most modern of today's guns, loads and techniques in his remarkable book Successful Handgun Hunting.

Over 150 photographs document the origins of handgun hunting and bring you to the present. Included are many neverbefore-published photos of handguns from HM Tower of London gun collection.

The author teaches both the beginner and the experienced handgun hunter with informative chapters on guns, ammunition and sights suitable for handgun hunting. He draws both on his personal experience and that of other handgun hunters to tell you the "secrets of bagging the big ones."

Handgun hunting techniques are explored with sections on how to improve your field shooting, how to stalk more effectively and how to succeed on your first handgun hunt.

A member of the NRA Board of Directors, the author has hunted extensively with his handguns but his book is not at all a self-serving "ego trip" bragging about his own hunting. I was most impressed that the author, if anything, down-played his own hunting accomplishments and instead focused on sound, factual information to help a handgun hunter learn more about the sport and the guns used in the sport.

A lot of hunting books are nothing more than monuments to the author's ego, but this is not one of them.

I found the section on the history of handgun hunting particularly fascinating and I would buy the book for that alone. But there's much more to Successful Handgun Hunting to make it a "must read" for any handgun hunter.

Cameron Hopkins



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HANDGUN HUNTING

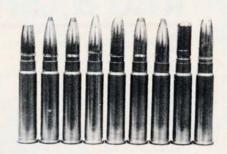
J. D. JONES

PIONEER HANDGUN HUNTER INDUCTED INTO SAFARI CLUB'S HALL OF FAME

Congratulations to Larry Kelly, the first handgunner to be inducted into the Safari Club International Hunter's Hall Of Fame. This is a tremendous honor with less than a dozen members in this elite group.

It really makes me feel good to see an old huntin', drinkin', fishin' and carousin' buddy recognized like this. Just a couple of months ago when we were fooling around Scandinavia—in between Larry's bitchin' about my driving (he gets nervous at anything over 110 mph)—he told me about his plan to publish a *free* brochure on the basics of handgun hunting. Well, hell, I didn't believe him and told him I knew it was just another advertising scheme he dreamed up.

Larry protested his good intentions vigorously. Said he had been well rewarded by the sport and wanted to do something for the guys thinking about trying it and those who were interested in what he thinks are the basics of the sport. He was



An array of .338 Woodswalker loads.

so sincere, I coulda cried.

He fooled me. He was telling the truth, which he does occasionally. The illustrated booklet is called *Handgun Hunting Basics*, and is *freeeeee*, although I'd recommend supplying a self-addressed,

stamped envelope. It covers The Sport, Calibers, Barrel Length, Distance, Sights, Bullets, Sighting-In, Revolver vs. Single Shot, Safety, Ethics and a bit on The Handgun Hunters Museum and Hall of Fame. He did such a good job on this—I'm really proud of him.

In fact, he has even agreed to personally autograph every one requested that has a note with it saying, "JD said you would autograph it."

Do me a favor—bury him with requests!

The first of the .338 Woodswalkers were delivered in December. Dennis Lawrence made the first kill—a Barbado ram at about 80 yards with a shoulderspine shot which exited without telling us much.

Lucky Nightingale got number two, which was a hog at 75 yards. The bullet struck it in the forehead and exited from the inside of the right rear leg. The hog weighed 122 lbs. gutted. The bullet was the 210 grain Nosler at a muzzle velocity of 2040 fps from the 10 inch barrel of the Woodswalker.

Lucky isn't much on sophisticated autopsies. Just said the bullet screwed up a lot of stuff between the holes. Not many are blessed with the kind of friends I have.

The .338 Woodswalker is a new wildcat that is easy to form and designed to handle anything in the woods, but with the deer/hog/black bear hunter in mind. It's put together on a flatside Contender frame with high visibility iron sights. It works.

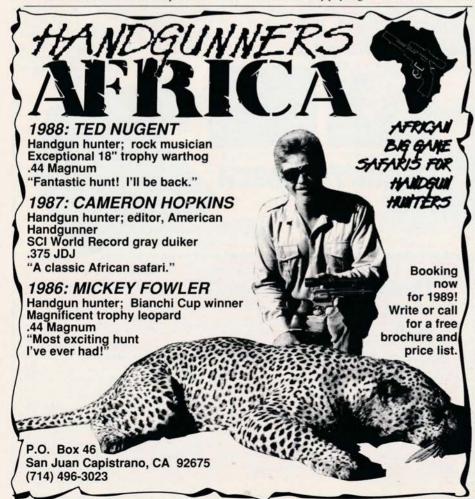
The first ones are Limited Edition guns for *Handgun Hunters International*. For more information contact SSK, 721 Woodvue Lane, Dept. AH, Wintersville, OH 43952.

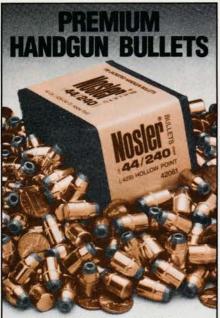
For the past few years I've been using a .44 revolver with factory ammunition for deer hunting just to experience what happens. Frankly, most of the factory ammo has been cooled down almost to the point of what we used to hot load .44 Specials a few years back.

In short, I had to conclude the .44 is adequate with factory loads, but you have to watch your shooting a lot closer. Handloads will safely give about 200 fps more velocity with 240s than factory ammo. That is a substantial difference and, in my opinion, a very worthwhile gain.

Most of the deer I shoot have their adrenalin up. Almost all are running in the woods. For these conditions I prefer a M-29 S&W and 2X scope of high quality. The trigger of the M-29 can be given a superb massage. Good optics with a sharply defined aiming point is what you need to hit what you want to hit on a running animal.

I fired six shots at running deer this year and called all six of them accurately. Two were tree shots. Two were heart shots, Continued on page 32





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VIDEO REVIEW

THE COLT DOUBLE ACTION RE-VOLVERS, Book. Vol I - 224 pages; 244 original illustrations plus other Colt diagrams, photos. Book: \$17.95; Video: \$44.95, with free copy of Colt DA book Vol I. Video is about 60 minutes. Available from: VSP Publishers, P.O. Box 887, McCall, ID 83638.

This video/book combination is designed to be a set, although the book may be purchased separately. The Colt Revolvers unit is number three in a series which also includes The Colt .45 Automatic and the S&W Revolver. Any comment in this review is generally applicable to all three book/tape units.

All three are simply excellent. The Colt Revolvers is singular in its content particularly, as it is the first really solid attempt, in this reviewer's opinion, to clarify the intricacies of Colt DA mechanics. Author/Director Jerry Kuhnhausen is a very experienced pistolsmith and also a graduate engineer. One gets the impression that he has also taught some classes along the way, too.

Colt's DA mechanics are very subtle. It takes special knowledge analyze, tune or repair them or any other example of "Victorian engineering." Nothing less than the depth of diagramming and live demo in this set can begin to explain Colts.

Book and tape open with obligatory disclaimers that their contents alone can't substitute for hands-on training. And it's true that you won't become a pistolsmith after one reading and viewing. Having said that, I can also tell you that by viewing this tape while at my bench, I was able to strip and diagnose a faulty rebound lever in my vintage Dick Special. It had been filed wrongly sometime back in the depths of time.

For most of us, reading and viewing these units teach how to see and discuss your handgun more like a gunsmith, and to talk to him intelligently. There are step by step checklists on judging any revolver's overall safety and "buyability." Material is illustrated in closeup, with very clear voice-over on tape. The manual adds extensive detailing and numerical data in a similar sequence of instructional development. In the Colt unit, there are priceless views of a cutaway, functional Python.

Anyone who considers himself an interested shooter should at least have the set(s) applicable to his own handgun(s). And, of course, to any that he considers purchasing. Then again, you'd want any relating to pure study.

You understand? Top scores to this excellent effort in three risky areas: book publishing, video production, and firearms instruction.

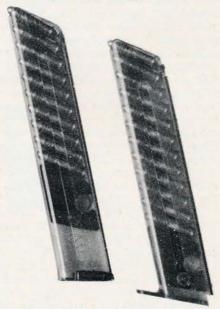
Whit Collins

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Continued from page 30

one liver and one in the rear of the rib cage angling forward. When any animal is excited, he is harder to kill than when he is not alarmed. Shot placement and the power factor then become more critical.

Two of these deer were heart shot and therefore dead with the first shot. Both kept on running without showing any sign of a hit except I could see the blood pouring out of the wound on one of them. The second shot at that one pulverized the liver, which is a very deadly shot in itself. That deer made it about 50 yards leaving a blood trail you could have followed by feel. However, he was still running and I stuck two more .44s in trees which probably saved a few steaks.

The other one was likewise hit in the heart with the first shot and kept on going while making a right turn to go up a soil bank. It collapsed with the raking shot.

Under most conditions, I call a shot by the location of the crosshair when the gun fires. Anything you can reasonably shoot at with a revolver that's moving does not require any lead. It just can't move more than a few inches while the bullet is in flight.

The same applies to the single shots as their higher velocities reduce the time of flight over longer ranges. Obviously you cannot stop the movement of the gun prior to the time it fires. But, you can never tell if the bullet went where you expected it to if the animal is still on its feet. The bullet can be deflected by any of the hundreds of twigs and whatnot between you and the animal. Therefore, if he is still on his feet or down with his head up, keep shooting.

On the first day of Ohio's season we had strong winds and snow so heavy you could hardly see 50 yards. A nice buck and doe popped out of the woods in front of me and stopped in the edge of some second growth maple. The wind was gusting from my left.

As I raised the gun, I decided to go for

Larry Kelly was recently inducted into the Safari Club International Hall of Fame for his lifetime of achievement as a handgun hunter. Kelly pioneered modern handgun hunting and has relentlessly supported the sport's growth.

a shoulder-spine shot and drop him in his tracks, or nothing. As I lined up, I noticed a small maple that appeared to grow out of his back directly in line with the deer's shoulder but it was snowing so hard I couldn't tell if the maple was in front or behind the deer. Colors were identical.

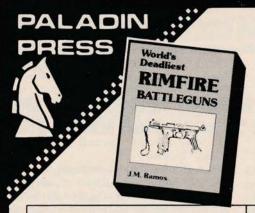
The Limited Edition Contender from SSK Industries in the potent new wildcat caliber, .338 Woodswalker. The powerful pistol features 10" barrel and can send a 210 gr. Nosler bullet at over 2,000 fps.

I figured if I held on that little maple and it was in front of the deer I'd never hit it and make a good shot. That's what I did.

The snow was straight horizontal from about a 40 mph wind. The crosshair lined up as I became rock steady leaning into the wind. I remember thinking I'm seldom this steady shooting at anything and squeezed it off. The deer bounded away.

So if you ever run across a maple in eastern Ohio with a "dot" dead center in it and a heart caved around the dot with the numbers 12-88 and JDJ you will have found my first heart shot of the season.





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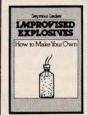
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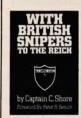
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GUN LEGISLATION THE NRA

WAYNE LAPIERRE

DESPITE SOUND DEFEAT, ANTI-GUNNERS RALLY FOR NEW ASSAULT ON LIBERTY

A lthough the movement to impose a nationwide ban on legal handgun ownership has been championed by antigun organizations, media moguls and a handful of political lackeys, the American people just aren't buying it. Surveys indicate that a vast majority of law-abiding citizens aren't ready to rescind their Second Amendment rights.

Millions of everyday Americans want the opportunity to own a handgun both for sporting use and for self-protection. They've proven it both at the polls and in their response to the constant barrage of anti-handgun legislation that has infested Congress like fleas on a mangy dog.

It's no secret that gun owners played a major role in electing President George Bush. And every day, while the national media attempts to mislead the public with unfounded attacks on firearms ownership, more and more law-abiding citizens are purchasing handguns as a deterrent to crime.

During recent years, while some lawmakers flirted with anti-gun organizations such as Handgun Control, Inc., record numbers of American women—tired of criminal assault—purchased handguns and were trained in their use.

And while TV networks and certain national newspapers attempted to confuse the public about restrictions on firearms, some 1,000,000 American citizens per year used firearms to defend themselves from criminal attack.

The American people have gone to the polls and proven without a doubt that they do not want restrictions on their ability to own a gun. Forty-three states now guarantee the right to keep and bear arms. Just last year, Nebraska, a state that reflects solid middle-American values and traditions, became the latest to pass a "right to keep and bear arms" constitutional amendment. We at the NRA feel that several of the remaining seven states are now ripe to follow Nebraska's lead.

Just two years ago in Florida, the people fought for and won the right to carry a handgun for self-protection. After the people's victory, anti-gun forces and their media propagandists predicted that south Florida would echo with gunfire. In fact, after two years of monitoring the success of this legislation, even formerly dubious law enforcement officials admit that the law is working.

Isolated shooting incidents involving handgun permit holders have been used in justified self-defense against violent criminals with records as long as the lines at Disney World.

What the anti-gun organizations won't recognize is known by the rest of us to be clear, cold reality: only the law-abiding follow the law in obtaining handguns or firearms of any kind. Criminals don't stand in line, fill out forms or present identification. And they laugh at those of us who do.

Although the sport of handgun shooting is certainly enjoying increased popularity, many feel that the recent surge in handgun purchases has centered around escalating crime. Millions of citizens have up this sentiment with cold hard fact, are organizations like the NRA battling desperately with Congress over gun issues?

Right now we are anticipating a fight over a national "waiting period" for handgun purchases and bills that would ban the sale of semiautomatics, small, inexpensive handguns and firearms with non-metal parts. These are tired old issues that American voters or federal lawmakers have already turned down—or thought they had.

Yet, this legislation continues to crop up, either due to the efforts of anti-gun groups or from unwarranted hysteria aroused by the media. Most troubling of all, these measures have sometimes gained support from lawmakers who, if they listened to their constituency, would know better.

We must remember that last year, a margin of only 23 congressmen prevented a national "waiting period" and registration scheme for handgun purchases from going into effect. Congress must be careful not to create a chasm between itself and the will of the people, particularly

The U.S. Justice Department conducted a survey among violent criminals in prison. Time and again these criminals answered that they fear armed citizens.

purchased firearms because they no longer feel safe. They read the headlines, digest the statistics, and listen as the police say they no longer have the manpower to be where and when they are needed.

Not long ago, the U.S. Department of Justice conducted a survey among violent criminals incarcerated in America's prisons. Justice department officials asked these prisoners to name a strong deterrent to their nefarious activities, and time and again these criminals answered that they fear armed citizens.

While crime engulfed our society, a handful of cities passed laws making it more difficult to obtain a legal handgun for self-defense. More than 20,000 antigun ordinances, laws and restrictions are on the books across the nation. And in every instance, lawlessness and violence increased—the exact opposite of what the anti-handgun activists arrogantly predicted.

So why, with so much public sentiment on the side of firearms ownership, and with so much statistical evidence backing where firearms restrictions are involved.

If Congress turns its back on the will of the people, then democracy begins to die. We at the NRA feel that the handgun issue and the preservation of our Second Amendment rights may be the miner's canary of a free America.

This is why we must remember that "we, the people" means you and me. It is vital to the pursuit of liberty that our voices be raised, and our strong wills be made clear again.

Wayne LaPierre, Executive Director of the NRA's Institute For Legislative Action, is a hunter, shooter and longtime firearms advocate. The NRA is a not-for-profit organization dedicated to supporting your right to keep and bear arms through its lobbying, education and promotional programs. Membership is \$20 per year and includes a subscription to The American Rifleman or The American Hunter. For more information, please write the NRA at 1600 Rhode Island Ave. N.W., Washington, D.C. 20036.

HANDLOADING

CHARLES E. PETTY

DO YOU REALLY NEED A CHRONOGRAPH? THE MYTH AND MAGIC OF BULLET CLOCKS

A couple of years ago I used the words, "chronograph wars" to describe the situation among the various makers of chronographs. Well, in the interval some have come and some have gone, but the war continues.

The simple truth is that the competition has caused chronographs to become less expensive, more convenient and more informative. With prices running from less than \$100 to about \$400 for a top of the line hobby chronograph, anyone who wants one can afford one. But do you really need one?

Well, let's look at what a modern chronograph can do. Obviously it will tell you how fast the bullet is going: they've been doing that for years, but the velocity of one individual shot really doesn't mean very much.

Chronographs will soon teach anyone that there are lots of variables. Even the most carefully loaded ammunition will else will do. They are positively wonderful, but only for someone who really chronographs a lot. These are, of course, top of the line units but still they sell for less than \$400.

If you're an IPSC shooter, chronographs can be diabolical instruments. I can't begin to count the number of times I've seen someone knocked down to minor scoring because the load that made major in someone else's gun wouldn't do it in theirs. With the new 175 power factor there's less room for error and we don't want loads that are hotter than they have to be. Weather conditions, temperature and humidity play a big role and it pays to check your load under various conditions to make sure it works all the time.

It should also be checked every time you change any of the components. There may be small variations in powder lots, primers or brass and a load that's close to the limit may become unacceptable due just as troublesome as making major in IPSC, for you want a load that's accurate and light. Too light, though, and you're out of the match. So testing becomes important at the other end of the spectrum.

So, how about bullseye shooters? They don't care about power factors, only pure accuracy. If the load has enough energy to function the pistol and make a hole in the target, that's fine. But a chronograph can still be helpful, for we bullseye shooters are accuracy fanatics and consistent ammunition is one of the more important elements. A lot of bullseye shooters spend quite a bit of time testing loads to find an accuracy edge. Chronograph data is useful for them too.

But, you say, I don't do any of those competitive things I reload for the fun of it and to shoot more. Do I need a chronograph?

Reloading is a hobby by itself for a lot of people with an experimental inclination and it's really pretty rare for any load we pick from a loading manual to deliver what the book says. Usually the velocity is lower because of the difference between your gun and the special test equipment the manufacturers use. Their data is developed under controlled conditions and it's rare for something in the real world to duplicate the laboratory.

Published data is usually in the form of a starting load and a maximum and it isn't always possible to interpolate what something between the two will deliver. I'm opposed to maximum loads simply for the sake of maximum and often find that best accuracy falls somewhere in the middle. If velocity is important, it still may be possible to get almost as much with a small reduction in charge weight. I really enjoy trying different loads or components and have been surprised at the effect of seemingly minor changes. But without the chronograph, I'd have never known.

A few years ago I would have said nobody other than the most serious reloader really needed a chronograph but I've changed my mind. Those were the days when you had to lug a ten foot pole to the range, fiddle for half an hour getting everything set up and then laboriously write down each result. Often you had to pull out a pocket calculator and crunch your numbers.

Well, those days are, happily, gone. Those wonderful electronic gadgets called integrated circuits have brought to the range the same sort of convenience that has delivered "smart" refrigerators, microwave ovens and VCRs to our homes. The drudgery is gone and the various manufacturers carefully package their units for the convenience of the user.

So, if you are a serious reloader, or think you might want to be, a chronograph is all but indispensable. You don't have to spend a lot of money and the variety of equipment available nowadays is such that you can get a unit that will meet your needs.

If you are a serious reloader, or think you might want to be, a chronograph is all but indispensable.

vary from shot to shot. Sometimes these numbers can be rather large and, in fact, when I see really small variations I tend to get suspicious. The nature of the fire-arm/ammunition system makes it unavoidable and one of our foremost goals in reloading is to reduce these to the greatest extent possible.

Aside from telling you velocity in feet per second, almost all but the simplest units will also give you the average and possibly some statistical values such as standard deviation. One gives you a choice of standard deviation, mean average deviation and coefficient of variation (a very handy term). One will even calculate IPSC power factors.

And now there are two that will print everything out for you so you don't have to write anything down. Until I used a unit with a printer, I didn't realize how much time I spent scribbling, but now nothing to differences in components.

But, you say, I don't shoot IPSC I'm a silhouette shooter. The silhouette games are the most accuracy demanding of the pistol disciplines and it takes quite a bit of energy to known down those rams. Silhouette loads must be highly accurate and they're usually pretty near maximum. A chronograph isn't going to tell you whether a load will be accurate, but consistency is one of the keys to accuracy and the chrono will tell you about that. The chronograph's information is needed to make use of the ballistic tables that will tell you how much oomph it's got left when the bullet wanders downrange. And that's really important.

Well, how about someone who's into Action Shooting? Instead of trying for an upper end of power, though, the Action Shooter is concerned only with making the minimum power floor. This can be

PISTOLSMITHING

JOHN LAWSON

THAT'S NO GUNSMITH, THAT'S A DAMN BUTCHER! (HOW NOT TO TEST A NEW GUN)

I don't know what you're trying to pull on my buddy, but this pistol won't hold a group," the tall Army sergeant standing at a firing point said in a loud, authoritative voice as he threw the weapon roughly onto the bench, then held up the target he'd just fired.

"The sights are too low, the trigger is stiff and jerky, the hammer and recoil springs are too heavy, the safety's too stiff and the magazine catch spring is too weak. But, the worst thing is that it jams every second or third round."

He turned and looked right at me, speaking in a louder voice. "You're no gunsmith, you're a damned butcher. Where I'm concerned, you've ruined a good pistol and I think you should buy him a new one."

The chatter stopped and everyone on the firing line was looking at me in embarrassed silence. A fired case rolled off the bench and tinkled to the concrete floor. I stepped forward and picked up the target. Shot holes were strung into the lower left corner, some in and some outside the scoring rings. As I glanced at the label on his box of handloads, I realized he'd used a load designed for a light recoil spring: Lyman 452460 ahead of a light charge of Bullseye in a variety of cases that were uncrimped. That would account for the frequent jams.

The shotholes spread into "jerker's cor-

it into a two hand hold. Beads of perspiration ran down my face. "Morituri te salutamus." I muttered to myself.

The pistol had protruded into the smoky floodlight glare ahead of the firing point. I stepped back a half pace and locked into a firm grip.

"I gotta see this!" my antagonist said.
"The only way that pistol will shoot a oneinch 50 foot group is through a 50 foot
piece of one inch water pipe."

I mentally shut out the sound of his voice. There was no reality except the front sight blade, sharp against the fuzzy white X at the center of the slow fire target. My finger took up the slack as the blade moved gently back and forth across the X.

The first report surprised me. I recovered and finished the string of five shots, then ran in my target. As it got closer on the trolley, I could see the tight

As a general rule of thumb, hot loads will group closer than light loads, provided that the load used is intrinsically accurate.

ner" of the target was due, I was convinced, to the shooter taking a light grip and getting rough with a slightly heavier trigger pull than he was used to. I tried to be tactful.

"This is a pistol designed for combat," I said, "It won't function properly with light loads meant for target shooting." I referred to the fact that the owner was leaving for duty with a Military Advisory Group in an area where a pistol's function was life insurance. "Combat shooting is a good deal different than bullseye shooting."

"Pistols are pistols, and shooting is shooting," he pontificated.

"You're obviously an expert target shooter," I said.

"You got that right," he snarled back

I picked up the pistol and loaded it with my combat handloads: 200 grain H&G 68's ahead of 7.5 gr of Unique in matched, trimmed to length cases that were "burnish crimped" with a homemade taper die. It was a stiff, but very accurate load, if the sheeter did his part

if the shooter did his part.

The modifications I'd done to the GM Colt made it state of the art for that summer of 1961: National match barrel and bushing, low mounted Micro sights that I'd dehorned, long trigger and flat hammer spring housing, action work, new set of snappy springs and a refinish in rust blue.

The action was fitted tight enough to group adequately, but loose enough to insure reliable functioning. It had delivered tight groups with no flyers yesterday, from a machine rest. It felt familiar as I raised

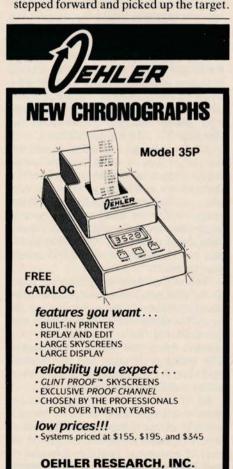
group in the X ring. I unclipped it and handed it to the sergeant. Then I began breathing normally.

The GM turned in another fine group on the machine rest. I bolted the sergeant's National Match pistol into the rest and fired a group with his ammunition. The combat Colt had delivered a slightly tighter group than the NM.

Frustrated and muttering to himself, the sergeant fired a group with his pistol that was as good as mine had been. "I don't understand this," he said. I didn't feel much like explaining it to him, so I retired from the range and drove home in the dusk.

t's usually best to wring a newly modified pistol out in a machine rest and hand held. If you use the bench rest position, support your wrist on a sand bag rather than bedding the pistol butt into the rest. This will give you a more realistic point of impact. When you clamp the pistol into a machine rest, be sure to let the frame bed into the rubber insert for a few rounds before firing your test group. And, as a general rule of thumb, the hot loads will group closer than light loads, provided that the load used is intrinsically accurate. Any good loading manual will suggest a variety of loads and indicate those that prove the most accurate.

As we've seen, a shooter experienced in many different styles of shooting has an advantage over one who only practices one shooting discipline. Who knows, you may have to shoot your way out of a corner someday.

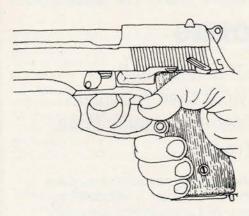


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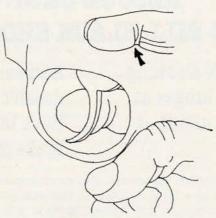
HANDGUNNING HINTS

Bennett Viken and Robin Sutton

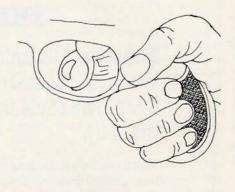
Double Action Trigger Control



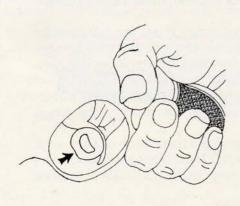
1. Never put a finger in the triggerguard until you are ready to shoot.



2. Pull the trigger with the inside portion of the finger pad on your index finger. Never let the finger slip beyond the first joint.



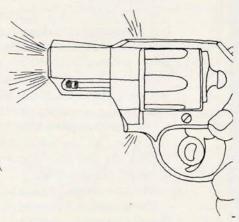
3. Use only the trigger finger itself. If you squeeze with your entire hand, your sights will wobble.



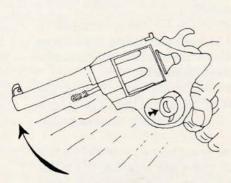
4. In double action shooting begin taking up trigger-slack while you are up slack and the round's ignition bringing the gun up and the sights on line.



5. Travel distance between the taken should begin in near anticipation of sight alignment.



6. The actual firing should come as a surprise.

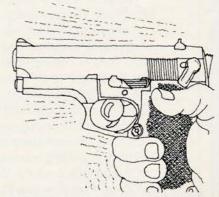


7. The key is smoothness.

© Bennett Viken and Robin Sutton 1989



flow in an even non-stop motion. Only stop and begin again. practice will assure this smooth flow.



8. All events should be coordinated to 9. Should you hesitate for any reason,

The AYOOB FILES

RESCUE SHOT: THE BILL BLACK SHOOTING

Situation: His knife slashing viciously, the man lunges at a cop. The blade is aimed at the belly.

Lesson: If non-lethal force doesn't work then you might have to resort to deadly force. Make it count!

March 4, 1984, midnight: The occasional flurry of snow falls gently through the rocky mountain darkness, leaving a light coating on the pavements of Littleton, a 38,000 population suburb of Denver, Colorado. Cpl. Charles W. "Bill" Black is one of the shift supervisors for the 59-man Littleton Police Department.

He's young, in his thirties, and bright. A member of Littleton's SWAT team, he has expanded his excellent training background by joining the National Tactical Officers' Association and by taking courses at his own expense at Gunsite, Chapman Academy, and Lethal Force Institute.

At his side, in a G. William Davis #4500 duty holster, is his pistol. If you can tell a cop by his weapon, you'd describe Black as a meticulous professional. The gun is a Colt Combat Commander tuned for street duty use by Ikey Starks of Sports West. The bushing has been fitted to the barrel for maximum accuracy with reliability, the magazine well bevelled for fast reloading, and the chamber throated for the issue 185 grain Winchester .45 ACP Silvertips he carries. National Match sights have replaced the little ones that came on the gun. A beavertail grip safety fits the weapon to his hand.

Black shoots 99% with this gun, as befits a department weapons instructor and armorer. He's never had to fire it in the line of duty, but he consciously maintains his skill because he knows the day may sometime come when speed and accuracy might make the difference between life and death.

What he doesn't know is, that moment is only two hours away.

Elsewhere in Littleton, things are coming to a head for a troubled suburban family. John Trott is angry.

The bearded man is also drunk. A longtime problem drinker who began his binge the previous morning, Trott's long experience with booze and his six-foot-three, 220 pound frame generally allow him to absorb his alcohol well. But when he loses it, it's rage time. Fists pounded into walls, yelling, barfights.

Tonight, after a long-smoldering marital argument has come to a head, Trott goes over the brink. He announces to his wife that he is going to kill himself.

Nanette takes him seriously. She knows his propensity for violence. He has spoken before of dying by gunfire, and of engaging cops in a shootout fatal to both sides. She slips away from him at fifteen minutes past midnight, and while John sits at the kitchen table thumbing .44 Magnum rounds into his Ruger Super Blackhawk, Nanette dials 911.

A suicidal/homicidal problem drinker with a gun is not a routine call. Before long, the SWAT team has been activated and a trained negotiator is on the line. One of the negotiator's specialties is hostage retrieval. It will come in handy: John Trott has made it clear to his wife that she and their three children are not free to leave.

The situation proceeds. Through most of it, the phone line is open, being recorded on the cops' end. Meanwhile, the SWAT members have been deployed. Some are wearing the black fatigues that are the standard uniform of the special team. Others, like Black and Mike Harris, have responded from patrol duty and are still wearing their uniforms. Harris hasn't

Continued on page 86

COP TALK

MASSAD AYOOB

IN DEFENSE OF THE BERETTA: DESPITE FAILURES, AYOOB STILL LIKES THE 92

B eretta-bashing has become quite the rage these days. A handful of slides separated on model 92F pistols, triggering this response by the Government: troops with the new handguns were ordered to turn them back in to the armorer after 3,000 rounds had been fired.

This led to tacky jokes. ("What's the new safety device on a Beretta 9mm?" "An air bag.") What it should have led to was simply consulting with Beretta engineers and Magnafluxing the frames to check for stress points.

Certainly, a separated slide is a grave concern. In one case the sailor behind the gun was cold-cocked by the impact of the broken slide and required several stitches.

At the same time, we are talking 14 slide separations (depending on whom you listen to) out of something on the or-

it is still in firing condition. (A second and a half, by the way, is also time enough for an assailant to pop the cylinder on your service revolver and punch out the cartridges.)

We are talking here a suspect who jumps you while the gun is in your hand. Here you are supposed to be in a state of high alert, and if you just stand there letting him futz with your pistol for a second and a half under those circumstances, you have committed suicide as surely as with ritual seppuku.

One of those sounding the clarion call to warn of the dangers of carrying the Beretta takes this a step further. He cautions (in an article published in a police professional journal, no less), "And don't throw the stock [sic] toward the person to distract him or simply get rid of it. Should he



der of a million pistols in one or another variation of the model 92 that are floating around the world. Even if you limit the scope of the problem to the approximately 133,000 Berettas in US military hands, that's a one-ten thousandth failure rate.

The next Beretta-bashing alert came when Hell's Angels and some inner-city Los Angeles youth gangs allegedly caught on to the fact that a certain manipulation can allow an attacker to field-strip your Beretta and rip the barrel-slide assembly away as you supposedly clutch helplessly on the trigger of the skeletal Beretta frame left in your hand.

Well, horror of horrors. One alert notes that it takes a second and a half for your assailant to accomplish this task. That is about three times as long as it takes the accomplished street-fighter to rip the pistol of your choice out of your hand, while

pick it up, he now has the entire weapon which he can reassemble."

Brothers and sisters, is a point or two being missed here?

If you are going to stand there like a mannequin and let this fellow disassemble and reassemble your pistol for you, I want to know just how long you've been feeling despondent. Such an attack is best answered by, first, executing a weapon retention technique. I prefer the Lindell Method. When a suspect grabs the top of your Beretta slide, you will have used your Lindell training to have bounced him harmlessly a few feet away, or brought him down in an aikido wristlock with your 92F's muzzle screwed firmly into the base of his skull, depending on which hand he attacks with.

Failing that, I would be just delighted if the bozo who jumps me for my gun field strips my Beretta. You see, the real worry is all the scumbags who train in prisons and outlaw hangouts to disarm policemen, take the gun away whole, and blow their brains out with it! Indeed, I would feel so grateful to this new breed of attacker that when he got a useless barrel/slide assembly away from me instead of a loaded pistol, I would probably respond by merely taking him at gunpoint with my backup handgun instead of emptying it into his vital organs, or by only breaking his kneecaps with my PR-24 baton instead of caving in his skull with it.

The only time a cop would be unable to respond with one of the above appropriate followups to a gun-snatch would be if the officer was unconscious or paralyzed with terror. In either case, I would much prefer that such an officer lose a barrel/slide assembly than a functional pistol the suspect could shoot the cop and others with.

I also hear the warning that a certain manipulation of the trigger bar on the Beretta can cause the pistol to discharge. This manipulation requires such a particularized effort that it is most unlikely to occur, and if it ever does during a violent struggle for the gun, a wise officer will have kept the muzzle of his or her 92F pointed at the assailant who is jerking on the gun. Should the felonious disarming attempt create an accidental discharge under these circumstances, we are looking at a self-resolving problem.

The bottom line is that numerous law enforcement agencies, including an overwhelming majority of the LAPD and the entire State Police Departments of Connecticut, Wyoming, and Maryland, have reported great success with the Beretta 92F. So, by and large, have the armed services.

I see a lot of 9mm Berettas go through Lethal Force Institute. They are superbly crafted handguns, as currently produced; working the slide feels like glass. Accuracy is excellent, far superior to the first versions. The open-top slide prevents stovepipes and similar malfunctions that plague other designs. The main reason I don't carry one is that it doesn't happen to fit my hand.

In short, I think it's sad that so many people are being stampeded away from this excellent weapon because of a handful of failures, and some unmeritorious arguments against its design. If you intend to dump your Beretta, though, don't let me stop you.

Instead, consider: you can't morally sell a gun to a bad guy, and you can't morally sell a gun you think is a death-trap to another good guy. If you really think the Beretta is junk, here's how to get rid of yours. Send it to:

Home for Orphan Berettas PO Box 122 Concord, NH 03301

Attention: Mas Ayoob, Headmaster I'll give your unwanted Beretta a good home, because I happen to think it's a damn fine pistol.



An assortment of heavyweight .357 bullets include, left to right, Lyman's #358430 198 grainer; the same bullet loaded in a .357 case; Federal's 180 grain factory load; the Federal 180 grain slug; and a Speer 140 grain hollowpoint.

The .357 Magnum, now a respected 50 year old, made its reputation on power. That power was a product of velocity for the .357 was the real pioneer in high velocity for revolver cartridges. Throughout the life of this cartridge that heritage has overshadowed the possibility that heavier bullets would reduce the velocity, but not the power.

There is one group of pistol shooters who will loudly object to that opening statement. They are the silhouette shooters who have been using the .357 Magnum along with other powerful handguns to knock over metal animals at outstanding ranges. A number of special heavy bullets have been brought out by Speer, Hornady, and others specifically for that purpose.

Handgun silhouette shooting is at least as specialized a sport as the bullets which were designed for it and the handguns used are predominantly single shots. In other words, these special bullets might or might not be adaptable for use in a regular .357 belt gun. For one thing, the .357 silhouette bullets are almost all full metal jacket designs and that might not be what the shooter wants riding on his hip.

A tip of the handgunner's hat must go to those silhouette shooters though. They showed us that velocity and power are not always synonymous in the applied sense. The heavier bullets might not have as much "paper" foot pounds of energy, because of their reduced velocity, but they do have greater knockdown capabilities. Knockdown is all the silhouette shooters are interested in

along with the necessary ingredients of accuracy. That's a practical lesson all handgunners can take advantage of.

While shooting a heavy bullet has no disadvantage in terms of power or knockdown, it also has some real advantages. A heavier bullet will provide deeper penetration. This



Speer 180 grain silhouette bullet can be pushed to over 1,100 fps.

can be accomplished with a hard nosed bullet, true, but a heavy expanding bullet will give deeper penetration with a wound channel that will be appreciated in hunting.

There's one more advantage to a heavier bullet at lower velocities, the reduction of blast.

The .357 Magnum revolver is not a quiet gun by anyone's standard and the reduction in blast, that ear ringing product of all magnum handguns, is one of the primary factors that turned me toward the use of heavier bullets. Results from using those heavier bullets have been very good. The level of blast was noticeably reduced and the power and punch of the .357 is all still there if not improved upon over the standard 158 grain load.

So, what is meant by a heavier bullet and what velocities can they be driven at? In general, a heavier bullet is any slug heavier than the standard 458 grain weight. The velocities these bullets can be given will vary with powder charges and barrel lengths, but the velocity lost by using a heavy bullet really isn't that significant.

The heaviest bullet that is commonly listed in loading manuals for the .357 Magnum is Lyman's #358429 Keith. Its weight is usually given as 168 grains but with softer alloys it can weigh 173 grains or more. This is an excellent hunting bullet and Keith designed it for the .38 Special several years before the .357 was introduced. In many .357 revolvers, this bullet requires seating deeper than the crimp groove. While #358429 is a good bullet, it's not as heavy as what I've learned to prefer.

For my own use, I have settled on Lyman's #358430 in the heavy version. They list this bullet in two weights, a 150 grain with two lubricating grooves or 195 grains with three grooves. This bullet has a one half radius ogive making it a rather blunt or true round nose. The straight sides to the nose ride the lands in the barrel very well and it has as much bearing surface as any .357 bullet Γve

seen

Data for this bullet in the .357 Magnum is rather hard to come by, but it was listed in Lyman's Reloading Handbook #44, from 1967. That's about the same time I started using #358430 and I favored a powder charge of 11 grains of Hercules #2400. Lyman indicated a velocity of 1018 fps with this load when fired in a Smith & Wesson Model 27 with a five inch barrel. To this date the 11 grains of #2400 is the only load I've used with the nearly 200 grain bullet in the .357 Magnum and Lyman listed it as maximum.

Some newer data is available from Speer for loading their 180 grain and 200 grain FMJ bullets in the .357. They list their data in two columns for the 180 grain bullet, one column for a S & W Model 27 and the other for the Contender single shot. Because I am relating to revolvers I will quote only from their revolver data and, for the sake of brevity, only the #2400 load. Speer shows 12.2 grains of #2400 producing 1,113 fps from the 8%" barreled revolver. Two other powders give higher velocity and this data sheet is included in every box of these Speer bullets.

A data sheet comes in every box of Speer's 200 grain .357 FMJ silhouette bullets too but that data is for the .357 Maximum and not the .357 Magnum. It shows velocity taken from a Dan Wesson with an eight inch barrel and the top load of #2400 with the 200 grain bullet was 10½ grains. This combination developed 936 fps. Some of the other powders did give slightly higher velocities.

While discussing heavy bullets in the .357, we can't leave out Federal's 180 grain factory load. This, in a nutshell, is a fantastic load with an excellent JHP bullet. It's a crying shame this bullet is not available to handloaders. It was Federal's factory load which made me interested in finding out what heavy bullets were doing in my sixguns.

A fresh batch of the heavy #358430 bullets were cast out of wheelweight alloy. They weighed 198 grains after sizing and lubricating with deer tallow. These bullets were loaded in W-W cases over 11 grains of #2400 and seated with the new RCBS taper crimp dies.

This bullet has no crimp groove, yet recoil demands that they be crimped. A standard roll crimp will many times cause the case to bulge just below the crimp when there is no groove for the case mouth to be rolled into. The new taper crimp dies put an end to this problem and they assure a good firm crimp at the same time. The taper crimp dies are also extremely useful for loading automatic pistol cartridges where a crimp might be desirable but the case mouth must be straight for headspacing.

When chronographed out of my 4¾ inch barreled Colt Single Action, the 198 grain cast bullets produced an average velocity of 1,038 fps. This is a good general purpose load for a belt gun by providing deep penetration and developing 478 fpe. That's more foot pounds than either the .45 Long Colt or the .44/40 sixgun in factory loads.

Next the 198 grain cast load was fired in a Colt Single Action with a 7½ inch barrel and



On the left is a 198 gr. cast slug fired from a .38 Special and next to it is an expanded 180 grain .357 Magnum Federal bullet. The magnum's extra velocity allows for better expansion or "mushrooming."

The author takes credit for the flyer at left, but otherwise heavyweight .357 slugs shoot accurately.

the velocities averaged 1,085 fps. Federal's loads were also tried in the longer barreled hogleg and they averaged 1,087 fps, the slower powder having more room to work. Energies figured to be 522 foot pounds and 471 foot pounds respectively.

Accuracy was not forgotten but there were no comparison tests made. I knew from previous experience that the heavy #358430 bullet over 11 grains of #2400 was an accurate load. To provide an example, I loaded all the chambers of the 7½ inch Colt Single Action and fired at a two inch circle at 60 feet using a two hand hold. A perfect group is always nice but I blew it on the first shot, high and left. The other five are pretty good, though, with four in the circle and one more on the edge.

For general use, I favor heavy bullets in the .357 Magnum. By shooting the heavy bullets all the unfavorable characteristics of the .357 are reduced, recoil, muzzle blast, and leading. At the same time the heavy bullets bring no disadvantages with them. After all, a heavy sixgun slug at 1,000 fps is nothing to scoff at. At the very least, heavy bullets offer another page of versatility.

TAFFIN TESTS

The late '40s and early '50s were great times for a young man interested in sixguns. Beat up but repairable Colt Single Actions, the "pre-War" Colts, were available in abundance with the price in the reachable range of \$40.

better killer on game than the newer .357 Magnum. In his experiments, Casull played with numerous calibers from the .22 Hornet up through the .44's, but always came back to the .45.

The other favorite sixgunner's big bore

holds a soft spot in the heart of many a sixgunner, myself included. But Colt SA cylinders are thin, almost paper thin in .45 Colt chambering with little or no margin of safety built in because the design goes back to black powder days when pressures were relatively low.

The early experiments in pursuit of a more powerful .45 saw Casull bulge many cylinders. The cartridge was a good one, but the walls between the cylinders of the Colt sixgun were too thin. Along the way, frame mounted firing pins were used along with special barrels and heattreated frames. All to no avail. Cylinders burst, top straps blew.

Ignition problems also developed, so primer pockets were reamed to accept rifle primers. This helped some, but not enough. The Casull experiments were far ahead of the powder availablity and nothing was yet available to deliver the velocities that Casull was looking for.

the .454 Casull

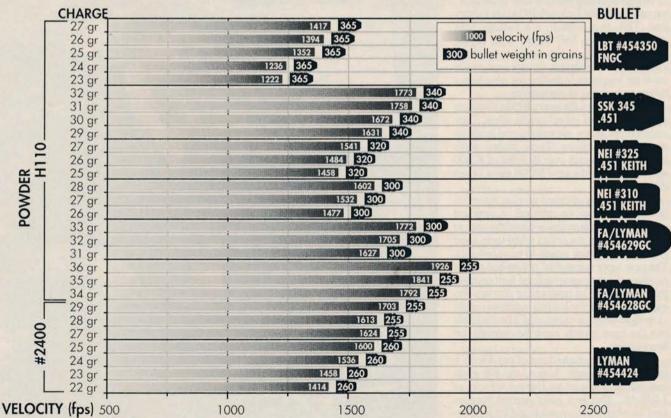
A young, virtually unknown gunsmith established a love affair with the Colt Single Action as he rode the Utah hills with a Peacemaker as his companion. Dick Casull was about to embark on the path that would lead to today's .454 Casull.

Casull preferred the .45 Colt chambering in the Colt SA as he had found the old .45, dating back to 1873, to be a much

of the time, the .44 Special, was only available with folded head, or balloon-type, cases. Winchester had just brought out solid head cases for the .45 Colt. This resulted in much stronger brass which would be needed for the experimenting that was ahead.

The Colt Single Action was, and is, a beautiful handgun and even today still

HIGH PERFORMANCE LOADS FOR THE .454 CASULL



WARNING: Neither the author nor American Handgunner accept responsibility for results obtained with this reloading information due to the inherent variation in handloading components and individual reloading techniques.

The powder problem was solved, for the time being at least, by going to duplex and triplex loading. The best powder available at the time was Hercules #2400, but it did not ignite Casull's loads satisfactorily. A triplex loading consisting of three Hercules powders, Unique, #2400, and Bullseye, worked much better. The powders were loaded in sequence and were held in place by compression.

Winchester's 296 and Hodgdon's H110 had not been developed yet and their entrance onto the scene removes all need for duplex and triplex loads. All modern .454 loads are assembled without mixing powders. Do not ever mix different brands or types of powders. It is exceedingly dangerous and can result in serious personal injury.

Casull's goal was to get a 230 grain bullet to a muzzle velocity of 1800 fps. The brass could handle it; the specially loaded ammunition could handle it; the guns could not.

A conventional six-shot cylinder was just not strong enough to contain the pressures that are generated. The answer seemed to be a five-shot cylinder that would give greater strength and more metal between chambers.

Dick Casull saw the need for the extra strength and he fabricated some five-shot cylinders that were as large as possible yet still fit the frame window of the Colt Single Action. Using 4140 steel and five-shot cylinders, muzzle velocities of 1300 fps were obtained.

By now Casull, still in his early twenties, became interested in heat-treating and metallurgy. He figured out a way to heat-treat frames to 40 Rockwell without warping them in the process. This was 1954, and with a Colt Single Action .45 fitted with a custom five-shot cylinder, results of 1550 fps were obtained with 250 grain bullets.

This was considerably more wallop than the soon-to-be-unveiled .44 Magnum would deliver.

The power was there, but there was little margin of safety. In all of his experimenting, Casull was concerned with two things: ultimate power in a portable package, and to make the guns completely safe.

By 1957, Casull, in pursuit of his goal of power plus safety, decided to build his own single action frame. Casull was now at the point that he could engineer parts as needed, and using 4140 steel for the frame and 4150 steel for the cylinder, the first ".454 Magnum" was created. The .454 had progressed from modified Colt Single Actions, to five-shot cylindered Colts to a custom built, five-shot single action. The .454 Casull had arrived.

Since 1983, the .454 Casull five-shot revolver has been manufactured by Freedom Arms. A few six shot revolvers have been offered in .454 Casull by other makers. Approach loading for these other revolvers with extreme caution as they do

Continued on page 68

Combat Corner Exciting new accessories for combat shooters!

Heinie Guide Rod

Richard Heinie, pistolsmith extraordinaire and member of *American Handguner's* elite Club 100, now offers a tungsten steel guide rod assembly. Combat shooters look for reduced recoil while firing full power loads, and it's no secret that added weight helps to soak up recoil. Enter the tungsten guide rod.

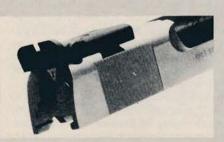
The tungsten guide rod is twice as heavy as standard rods. Conventional guide rods made of stainless steel only weigh 1½ ozs. while the Heinie tungsten rod hefts an impressive 3 ozs. The new Heine guide rod also facilitates reliable functioning of the 1911 Government Model by preventing the recoil spring from binding.

The Heinie tungsten guide rod retails for \$65 (one piece) and \$75 (two piece) from Richard Heinie, 821 E. Adams, Dept. AH, Havana, IL, 62644.



Wichita Combat Sight, Revolver Slab-Comp

Wichita Arms announces a pair of combat accessories for wheelgunners and auto shooters. The new Wichita Low Profile Sight for the Model 1911, Browning Hi-Power, CZ-75 and S&W 745 pistols blends with the contour of the slide and mounts very low.



The sides of the sight are radiused to blend well with the slide and the rear blade is gently rounded to prevent snagging. This also gives a faster sight picture for combat shooting.

The new *Slab-Comp* from Wichita Arms is a screw-on barrel weight and muzzle compensator for the L-frame family of S&W revolvers and the Ruger GP-100 revolver. Wichita claims a 52% reduction in muzzle jump with 13 ounce Slab-Comp. It attaches with one screw so the only modification required is to drill and tap one hole in the gun.



Similar to *Slab-Comp*, the new *Revolver Comp* is lighter and smaller than its bigger brother. It weighs six ounces. It fits the same guns and also requires one hole to be drilled and tapped.

The Slab-Comp lists for \$105.95 and Revolver Comp sells for \$59.95. For more information, contact Wichita Arms, Dept. AH, 444 Ellis, Wichita, KS, 67211.



Affordable Runner

Action Target announces what it claims is an "affordable" moving target for \$799.00. Dubbed *The Runner*, the moving target is portable enough to fit in a car truck and can run on the car's cigarette lighter or a small battery pack.

The *Runner* features four speeds of four, 10, 15 and 18 feet per second. Setup can be done in minutes. All you need to provide are two 2x4's and hammer to drive four stakes. The *Runner* can be set for any length up to 80 feet with the self-contained cable and tension unit.

For more information, contact Action Target, Dept. AH, P.O. Box 636, Provo, UT, 84603.



GET THE POINT!



Hydra-Shok, the wicked hollowpoint bullet with a spike, is back.

By Charles E. Petty

Some of you may remember the original Hydra-Shok, a vicious hollow-point bullet that looked like a .38 hollowbase wadcutter seated backwards with this funny post in the middle. The spike was, and is, the key element in the impressive expansion that the bullet delivered.

In 1986 Federal purchased the patent to the Hydra-Shok design, and is using it to launch a line of Premium handgun ammunition that will complement their existing lines of Premium rifle and shotgun loads. Federal's plan is to offer the most popular handgun calibers first and loadings for .38 Special, .357 Magnum, 9mm Luger and .45 ACP will be available simultaneously. The new line will be marketed in distinctive 20 round boxes.

The act of purchasing the patent was only the beginning, and Federal's engineers have been working since. It wasn't simply a matter of just making a bullet either. Each caliber presented design obstacles to be overcome and each is carefully planned to work in the specific conditions of the particular caliber—in other words, the .38 Special bullet isn't the same as the .357 Magnum and there are different 9mm designs as well. Two of the important considerations are the hardness of the lead core and the thickness and construction of the jacket. These parameters have been refined over a period of time to the current configurations which Federal believes are optimum.

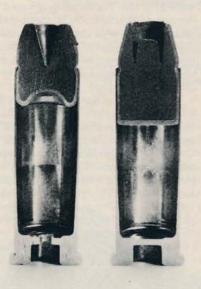
Handgun bullets have experienced something of a revolution in the last 20 years or so. Revolver bullets used to be bullet that deposits all its energy in the target and is capable of reaching the major organs and blood vessels of the chest or abdomen. The Hydra-Shok design is intended to do just that.

During a visit to Federal's Anoka, Minnesota factory I had the opportunity to shoot all of the new Hydra-Shok loads and check their performance in ballistic gelatin. If we accept the basic thesis of eight to 12 inch minimum penetration, all of the new Hydra-Shok loads meet those requirements. The table summarizes the results of those shooting tests.

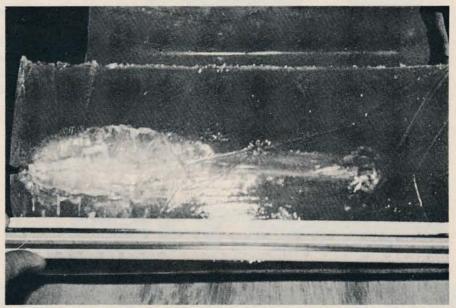
One of the more striking observations

from firing into ballistic gelatin was the effect of velocity on weight retention. In order to achieve reliable penetration, the bullet simply must retain as much of its original weight as possible and bullet design becomes something of a balancing act. If the jacket is too thin it will surely fragment on impact, but if it's too thick expansion will be inadequate. As you can see from the measurements of bullets recovered from gelatin, it's obvious that Federal has perfected weight retention.

Neither the .38 Special +P nor the 9mm lost any weight at all. In the case of Continued on page 66



A conventional hollowpoint (left) doesn't expand as reliably as the spike-nosed Hydra-Shok, normally.



This .357 Magnum 158 grain Hydra-Shok bullet tore through nine inches of ballistic gelatin, a testing medium that approximates flesh. Hydra-Shok bullets show consistent mushrooming in gelatin testing.

roundnose lead and pistols shot full metal jackets. Neither were worth much in defense or hunting applications, for they simply punched neat round holes and wandered off with plenty of energy left to do more damage.

One of the real problems from any study of self-defense ammunition performance is that it is virtually impossible to eliminate the host of variables attendant to killing people. And let's face it, that's what we're talking about. There are so many physiological and psychological factors involved that each shooting represents an almost unique set of circumstances. Only when a large body of data is considered does it become possible to draw generalized conclusions.

Current wisdom seems to be that a bullet must penetrate between eight to 12 inches to be sure of reaching vital organs. But the real bottom line is that there are no magic bullets, and never will be. The only sure way to instantly end a fight with a handgun is to disrupt the central nervous system of the assailant. This doesn't require superbullets, it requires marksmanship.

But the reality of gunfights is a different matter, and the best solution is to use a

HYDRA-SHOK BALLISTICS: ADVERTISED VS. ACTUAL

Ammunition	Advertised Velocity	Actual Velocity	Difference*
9mm Luger 124 gr.	1120 fps	1077 fps	-43 fps
9mm Luger 147 gr.	1050 fps	1000 fps	$-50 \mathrm{fps}$
9mm Luger + P + 124 gr.	1220 fps	1126 fps	-94 fps
.45 ACP 230 gr.	850 fps	796 fps	-54 fps
.38 Special + P 129 gr.	945 fps	952 fps	+ 7 fps
.357 Magnum 158 gr.	1235 fps	1238 fps	+ 3 fps

*Represented as plus or minus, advertised from actual. Advertised velocities based on factory pressure barrels; actual velocities based on real guns.

HYDRA-SHOK PENETRATION AND EXPANSION*

Ammunition	Penetration	Expansion	Recovered Weight
9mm Luger 124 gr.	9"	.580"	124 gr.
.38 Special + P 129 gr.	8"	.640"	129 gr.
.357 Magnum 158 gr.	111/2"	.655"	151 gr.
.45 ACP 230 gr.	9"	.772"	227 gr.

*All loads fired into ballistic gelatin from a range of 10 feet. Expansion measurement is at the widest point of the mushroomed bullet.



PERFECT TEN

After testing every bullet weight and shape of 10mm Auto factory ammo available, the author says the hot new 10mm is the best Ten since Bo Derek.

By Mark Moritz

So you've gone and done it. You finally broke down, and got on the 10mm bandwagon. You got a Colt Delta Elite, or other "10 MaMa." Now, what ammunition should you feed it?

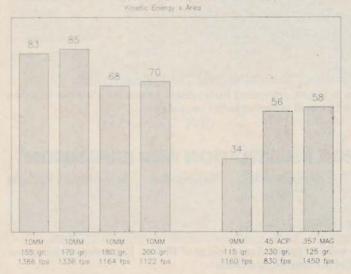
Here, for the first time, is a complete list of actual velocities for every loading currently on the market. All manufacturers, all bullet weights and configurations. These are not "factory specs," published by the manufacturers' advertising departments, from "test barrels." These are real velocities, from real guns.

The guns used were a Colt Delta Elite, and a Bren Ten. The chronograph used was the top-of-the-line PACT combination chrono/timer, with the optional printer. (The fully-loading PACT is a "best buy." If you are going to get one, be sure to add on all the options, because they are well worth the small extra cost.)

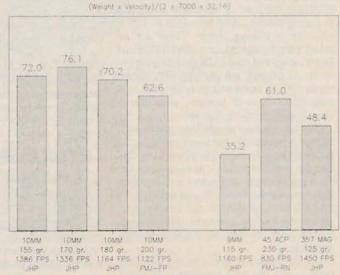
Two versions of the Norma ammo were tested. When the Bren Ten was introduced, the first batches of Norma ammunition were reported to be alarmingly hot. Jeff Cooper had specified a 200 grain bullet at between 1000 and 1100 fps, and what Norma produced was actually closer to

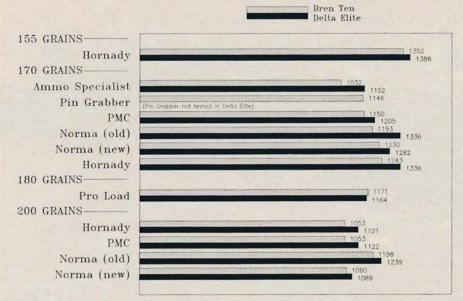


ENERGY TRANSFER (JOSSERAND



RELATIVE STOPPING POWER (HATCHER





P.A.C.T. chronograph @ 10 ft.

1200 fps. If you think a hundred feet per second is not much, consider what would happen if you loaded .45 ACP 230 grain hardball at 930 fps instead of the standard 830! What if you boosted your .357 Magnum from 1450 fps to 1550? The recoil was enough to cause loss of controllability in rapid fire, and it battered the guns. There were some early reports of Bren Tens getting loose sights and dented magazines, and with this load, it is no wonder.

Current production Norma ammunition is distributed by Federal, and is considerably reduced, down to where it should have been all along.

When I got my Bren Ten a few years ago, I laid in a supply of the original Norma super-hot loads. Sure enough, they came out of the Bren Ten at 1198 fps, and clocked 1239 fps out of the Colt. Folks, that is garstig. No gun could take a steady diet of those, nor could many shooters put up with

the hand-pounding. For comparison, consider that the standard IPSC load in a .45 is a 200 grain bullet at 850-875 fps, and that is considered "major caliber." Now increase that by 40%! Ouch!

The current production Norma ammo came in at 1060 (Bren) and 1089 (Colt), which is just right for self-defense, offering all the power you need, with plenty of "gun control" (which readers of this magazine know means "hitting your target.")

The Delta Elite consistently produced higher velocities than the Bren Ten, most likely because of the substantial "free bore" in the Bren. This freebore, an unrifled portion of the barrel just ahead of the chamber, was put in to reduce pressure—a direct result of the early Norma overloads. In only one case did the Bren Ten give a higher reading than the Colt. That was with the Pro Load 180 grain JHP, and the difference was only 7 fps.

Norma's "old" 170 grain JHP showed 1336 in the Colt, compared to 1282 for the recent stuff. That decrease is consistent with what we would expect. However, the same ammunition, on the same day, over the same chronograph, showed an *increase* in the Bren Ten. I can't explain that one, except to note that the old Norma 170's were very erratic in the Bren, with a high reading of 1244 and a low of 1155. An extreme spread (the difference between lowest and highest) of 89 fps is almost unheard of, so it is possible that more

Continued on page 70





Don Price of Zambia: "I recommend that all hunters on safari use Mag-na-ported guns—it helps when a quick second shot is needed. Mag-na-port® is a must for bagging the big ones."

Duane Smelser: "Everything I use is Mag-na-ported because I don't like guns that kick."

Lucky Nightingale: "I've taken trophies from all over the world, including the 'Big 5' of Africa, with Mag-na-ported handguns."



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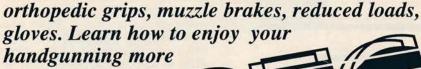


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Recoil is real and can be measured quantitatively. But what of felt recoil?

Felt recoil is the thump in your hand and it can be mitigated with



with tips on coming to grips with...



By John Taffin

Recoil? Relax and enjoy it!" I remember reading those words as a teenager too many years ago. And I believed it. Well, at least until I had my first encounter with the .44 Magnum.

My sixgun shooting experience consisted of a Ruger .22 Single-Six, a beautiful old Colt Single Action .38/40, and a brand new Colt Single Action .45 Colt. My love affair with the single action had already established deep roots, and I thought that the Colts, with their 180 grain and 255 grain bullets at 900 fps, had plenty of recoil.

The Smith & Wesson .44 Magnum was just starting to appear on dealer's shelves, and one dealer hit upon a novel idea. Instead of selling the first .44 Magnum he received, the local gunshop and range offered six shots for a nominal fee out of that first Smith & Wesson .44 Magnum, as they were called in those pre-model number years.

Just fondling that Smith & Wesson was pure enjoyment. Finished in Smith's Bright Blue of the 1950's, and put together with loving care by someone who obviously appreciated beautiful sixguns, it was worth the rental price I paid just to hold the big .44. I loaded the cylinder, relaxed, and prepared myself for real shooting enjoyment. After all I was a seasoned sixgun man by now with my "extensive" experience with the .38-40 and the

.45 Colt. Or so I thought.

To put it mildly, something went wrong when I dropped the hammer on the big .44 for the first time. I distinctly remember saying to myself, "This is not fun!"

What was supposed to be enjoyable was anything but. The big Smith & Wesson bucked in recoil, and the web of my hand felt a stinging sensation as the .44 Magnum headed for my elbow. At the same time the checkering on the stocks dug into my palm. This is enjoyment?

Maybe I just had the wrong .44 Magnum. I recalled firing a friend's .45 Colt Smith & Wesson and it had recoiled more than my Colt Single Action .45, or so it seemed. The Colt just rolled in my hand,

HANDGUN RECOIL				
CALIBER	BULLET WEIGHT	VELOCITY	HANDGUN WEIGHT	RECOIL
.32 Magnum	100 grs.	1400 fps	3 lbs.	3.3 ft/lbs
9mm Luger	115 grs.	1200 fps	2 1/2 lbs.	3.5 ft/lbs
.45 ACP	200 grs.	850 fps	2 1/2 lbs.	5.2 ft/lbs
.357 Magnum	150 grs.	1400 fps	3 lbs.	8.3 ft/lbs
.45 Colt	260 grs.	900 fps	2 1/2 lbs.	9.7 ft/lbs
.44 Magnum	240 grs.	1400 fps	4 lbs.	15.3 ft/lbs
.41 Magnum	210 grs.	1400 fps	3 lbs.	15.9 ft/lbs
.44 Magnum	240 grs.	1400 fps	3 lbs.	20.4 ft/lbs
.44 Magnum	300 grs.	1400 fps	4 lbs.	21.7 ft/lbs
.44 Magnum	300 grs.	1400 fps	3 lbs.	29 ft/lbs
.375 JDJ	270 grs.	2000 fps	4 lbs.	46.4 ft/lbs
.454 Casull	260 grs.	2000 fps	3 lbs.	50.3 ft/lbs
.454 Casull	300 grs.	1800 fps	3 lbs.	51 ft/lbs
.500 Linebaugh	440 grs.	1300 fps	3 lbs.	55.2 ft/lbs
.475 Linebaugh	440 grs.	1350 fps	3 lbs.	56.5 ft/lbs
.45-70	500 grs.	1300 fps	4 lbs.	58.2 ft/lbs
.454 Casull	340 grs.	1800 fps	3 lbs.	61 ft/lbs

The formula for calculating recoil is strictly mathematical and does not take into consideration ergonomic factors such as grip design, hand size, frame configuration or the strength of the shooter. Felt recoil is a subjective perception and impossible to measure scientifically. One shooter might feel 10 ft/lbs is intolerable while another might not flinch at 50 ft/lbs.



Four-inch bruisers like these .357, .41 and .44 Magnums along with a .45 Long Colt are much easier to shoot with the simple addition custom grips designed to minimize recoil. The Smith at top right still has those sharply checkered, poorly shaped stocks that have led to Smith's distinction of "world's worst factory grip."

but because of the hump in the backstrap, the tang of the .45 Smith & Wesson caught the web as the DA .45 recoiled. That must be the problem with the Smith .44 also.

So when it came time to purchase that first .44 Magnum I chose the Ruger .44 Blackhawk instead. Obviously this would

be the .44 I could enjoy. The grips were smooth so I would not feel the pain of sharp checkering digging into my palm, plus the Ruger had the tried and true single action grip which just rolled in the hand with recoil. Or so thought naive me.

Loading the cylinder of the Ruger .44,

I prepared myself for real enjoyment. Cocking the hammer of the 6½ inch Blackhawk, I then slowly squeezed the trigger. Again something went wrong! The recoil of the Ruger was even worse than the Smith. This time, as the gun recoiled, I got a solid rap on the knuckle and then the barrel pointed skyward as the hammer dug into the back of my hand. By the time the .44 was empty, the back of my hand was bleeding at the spot where the sharp hammer hit each time the Ruger recoiled. It was apparent by now that the author of "Recoil? Relax and Enjoy It" was not referring to the .44 Magnum.

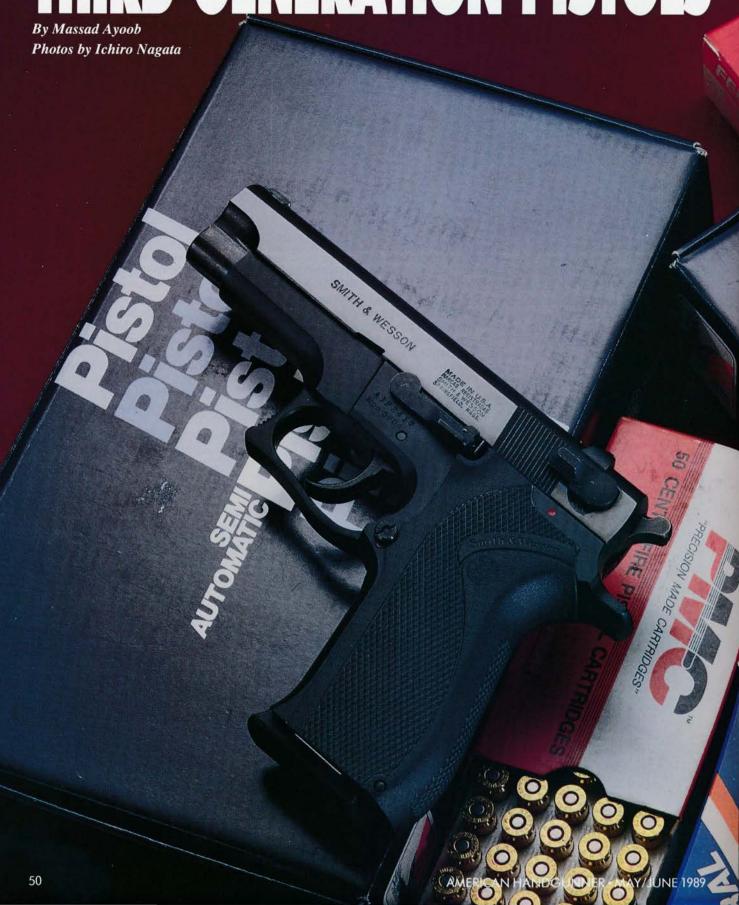
Two wooden pegs were driven into the wall of my attic hideaway, the Ruger .44 was put away and I went back to shooting guns chambered for the .357, .44 Special, .45 Colt, and .45 ACP. At least these guns were not so painful to shoot. Actually this was a very smart move on my part. Going from 250 gr./900 fps loads in the .45 Colt to 240 gr./1500 fps loads in the .44 Magnum, was really covering too much distance in one step. I started shooting the .44 Special and worked my way up to 250 gr./1200 fps loads, which in the light Smith & Wesson 1950 Target .44 Special recoiled almost as much as the .44 Magnum. But by working up gradually I was able to handle it.

A lot of years have passed since then. The old Flat Top .44 Ruger that gathered dust for a number of years has been conquered. I've learned to handle the recoil of the Smith & Wesson .44 Magnum and even larger handguns such as the .454 Casull and the .500 Linebaugh. Guns still recoil just as they did back with my first encounter in 1957, but shooters have learned to handle it. Maybe not to the *Continued on page 99*

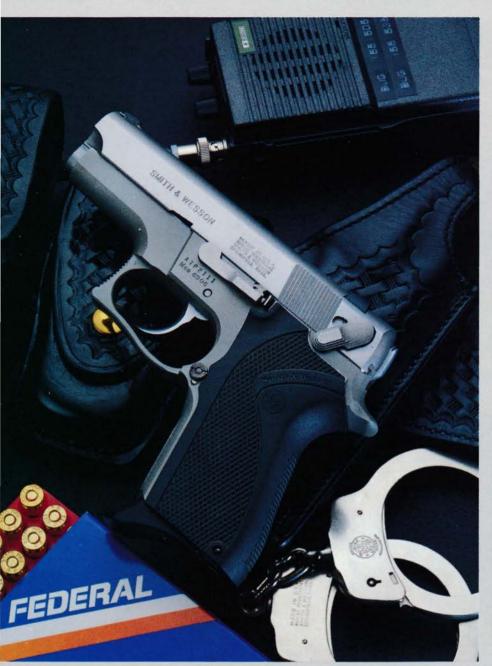


Handloading Editor Charles Petty touches off a sharply recoilling .44 Magnum handload, but the smooth wood grips and Mag-Na-Porting on this Ruger Super Blackhawk help tame the recoil.

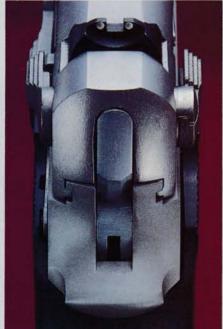
Smith & Wesson THIRD GENERATION PISTOLS











The history of the S&W autoloader goes back some distance. Bob Hass, Smith & Wesson's executive vice president of marketing, traces the company's efforts back to 1895, when Dan'l Baird Wesson's grandson Joe was assigned to study semi-auto pistol designs from around the world. Beginning with the .35 caliber pistol of 1913, S&W dabbled in the concept up to WWII, but the guns we're talking about today were conceptualized after VE Day.

1946: Company president Carl Hellstrom orders the design of a double-action 9mm pistol for the international military market.

1948: The first prototype is completed.

1954: The Army turns thumbs down on the very concept of replacing the venerable .45 auto, and to recoup its R&D costs, the firm readies the streamlined pistol for the commercial market.

1955: The first units hit the gunshop,

and their outstanding feel and sleek good looks win raves from gunwriters and shooters alike.

1967: The first major law enforcement agency, Illinois' State Police, adopts the Model 39 that had been introduced a dozen years earlier.

1971: A new generation of S&W 9mm pistols is born, with tougher extractors and bushings and feed ramps better designed for hollowpoints. The regular pistol becomes the 39-2, and a new 15-shot model, in prototype since 1964, is introduced as the Model 59.

1981: Another new generation with firing pin lock, heavier trigger pull, and better sights and feeding comes on line: the models 439 and 459 in alloy frame, followed by the short-lived chrome steel 539 and 559 and the immensely popular stainless 639 and 659. They are immediately followed by the compact 9mm "Mini Gun," models 469 and 669. In 1984, the

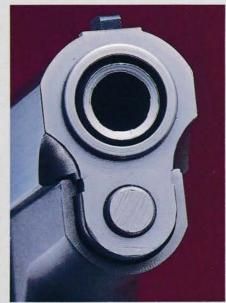
double-action service pistol line is rounded out with the first S&W .45 automatic, the 645.

This brings the gun's reasonably long modern history to 1988 and the latest breed of S&W battle pistol. Though most users considered the 39 first generation, the 39-2 and 59 second generation, and the 3-digit models third generation, S&W now officially lumps the first two into a single epoch of manufacture and has dubbed the new four-digit guns the Third Generation. So be it.

The new product lineup is the largest S&W has ever introduced. The debuting pistols go like this:

8-Shot 9mm: formerly 39 and 39-2 and more recently 439 and 639, are now the 3904 with alloy frame and 3906 in all stainless. Either may be ordered with fixed or adjustable sights with no change in designation.





15-Shot 9mm: formerly 59 and of late the 459/659, become the 5904 with alloy frame and the 5906 in all stainless. Sights same as 3900 series.

13-shot 9mm: *neé* the 469 and 669, has metamorphosed into the blue 6904 and the stainless 6906, both with aluminum alloy frames, and available with fixed sights only.

9-shot .45: the 645 has become the

4506, now available with adjustable as well as fixed combat sights.

The history of the S&W 9mm is a flawed one. The early 39s had a 60–40° step in the feed ramp that made them unreliable with ball and hopeless with hollowpoints, and the extractors and bushings were fragile. The 39-2 and 59 were still jammamatics with many JHP loads

The handy 6906 (far left) has a bobbed hammer and low profile sights, two good features for a handgun designed for concealed carry by a detective or armed citizen. The new S&W pistols (above) dispense with a barrel bushing in favor of an integral barrel lock-up device, a "swelling" at the muzzle that mates with the slide.





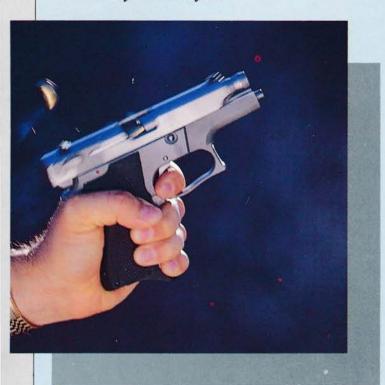
Among the 23 separate design improvements in the new S&W autos is an enlarged trigger guard. Old 645, above, and new 4506.





Shooting the Smith & Wesson THIRD GENERATION PISTOLS

By Massad Ayoob



The spunky little 6906 often produced tighter groups than the bigger 5906.

Some other gun magazines rushed into print with the hot news about the new Smith & Wesson automatics. In their mad dash to be first, they forgot one minor detail: to shoot them. Perhaps a few rounds, a clip or two, but hardly the sort of exhaustive test that you, the reader, expect (and deserve). Meanwhile, we wait. We publish no article before its time.

Our editor, Cameron Hopkins, likes to say that you don't have to be the first with your reporting so long as you're the most in-depth. These are doubtless comforting words for the editor of a magazine that's bimonthly, instead of monthly, to live by. They also happen to be true.

In the quarter of a year since a crew of police weapons writers and I were introduced to the new guns, a lot has happened. Several agencies have adopted the pistols, among them the Georgia State Patrol after a long flirtation with numerous autoloaders. They are giving their troopers the choice of the 4506 or the 5906, an egalitarian approach that worked well for Arizona Highway Patrol when that agency simultaneously adopted the .45 and the 9mm SIG.

Illinois State Police weaponmaster tell me they are delighted with the new generation guns and are upgrading the entire 2,000+ force to them. This department, which started the whole 9mm police

Continued on page 75

and, like the earlier guns, developed a nasty reputation for going off when

dropped.

The firing pin lock of the 3-digit guns cured the latter problem, and subtle engineering changes finally made these guns reliable with hollownose manstoppers. Accuracy was at the same mediocre level as 1955, however, and the trigger pulls were notoriously rough and "stagey," especially in double action. Moreover, a majority of cops and shooters felt that every model but the sleek 39 series had a boxey grip that ill-fit their hands and concealed poorly in plainclothes.

This brings us to the new four-digit

guns.

Looking at the accompanying photos, you'll see a more swept-back grip angle and rounder, trimmer grip edges. A "thirty-nining of the sixty-nine and fifty-nine," as it were. The same treatment has

been given to the .45 ACP.

The improvement in feel and "pointability" is enormous. Since feel is subjective, let me give you a personal opinion: the 59 and 69 series always fit my hand like T-squares with gland conditions, and the former pistol invariably pointed low in unsighted shooting. At the S&W Academy range, I was delighted to find that the 5906 and 6904 I shot were not only as comfortable as SIG nine millimeters, but in unsighted point shooting sent their 115 grain Remington hollowpoints right into the midriff of the combat silhouettes.

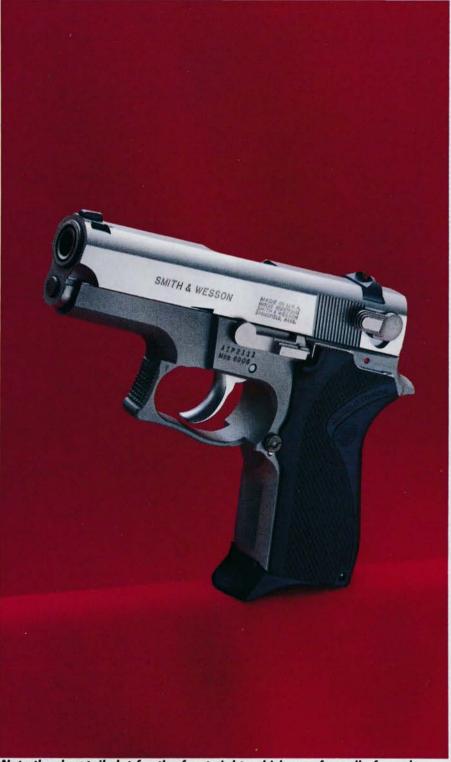
The double action trigger on the Smith has always been the curse of the gun in fast close-range employment. Rough in its travel, with constantly varying degrees of resistance as it neared the firing point, it was extremely difficult to master. If the Smith auto was a diamond, its trigger stroke was the curse that came with it.

This has also been addressed, in what is really the most sweeping series of engineering changes. S&W's new computerized trigger pull machine gave a profile of craggy peaks and valleys on the printout of the older guns. On the new one, the printline is smooth and rounded like a New England mountain. The change is

palpable-and dramatic.

Fellow tester Walt Rauch, an IPSC official, had long disliked this aspect of the S&W, as I had, and Evan Marshall had quit carrying his 459 in favor of the smoother SIG P-226. The three of us, along with other testers, were nothing less than amazed at the improvement. Walt and I each ran a full mag of Remingtons through different 5906s, all double action, decocking after each shot. Both groups took the form of single, ragged holes. Easily performed with these guns, this feat is virtually impossible with the older S&W Parabellums. The same marked improvement is seen in the 4506 over its predecessor, the 645.

A more acute grip angle, and a trigger guard hollowed out near the frame to bring the middle finger higher, help accomplish this. The real secret, however,



Note the dovetail slot for the front sight, which was formally forged as an integral part of the slide. Today's sight can be interchanged, perhaps for a tritium night sight.

lies inside the gun. A counter-bored clearance chamber relieves the draw bar spring from frame pressure, and a redesigned hammer boasts a single double action hammer notch with a radius added. The one palpable "stage" is felt at the half cock notch, which may also be redesigned out in the future. Nonetheless, we now have the first auto from Smith that has a DA trigger pull like a decent revolver.

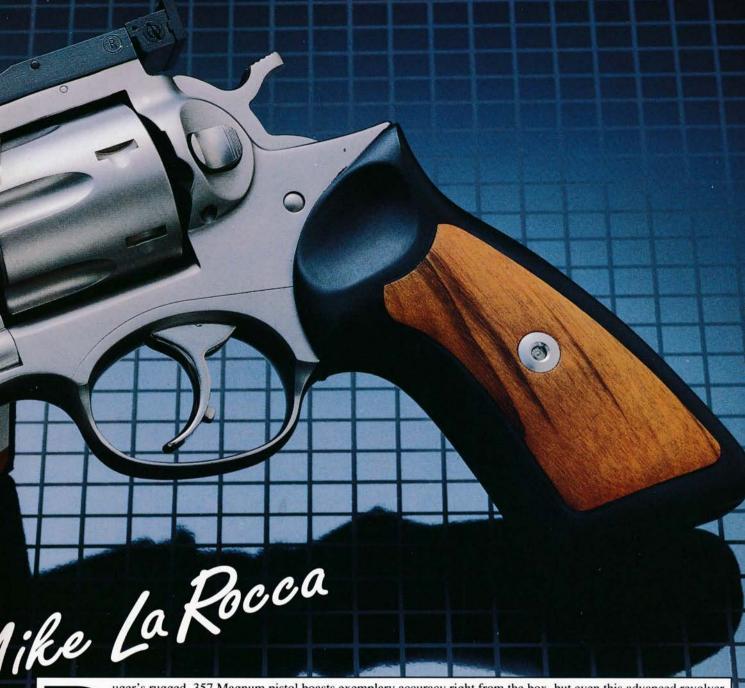
O ther subtle changes have been made. The front sight is now press-fitted, allowing for an easy change in shape if desired. It is more square than it used to

be, and the current profile does not seem to compromise concealment or snag-free draw. It *does* give a clearer sight silhouette and a sharp surface to aid weapon retention.

The current production will have some of the best 3-dot white insets yet offered, with the front dot significantly larger (as it should be) for rapid and decisive pickup in low light. Optional tritium night sights may follow, and will be easily installed for the user by firms like Trijicon in the existing three "dot recesses."

A Novak-designed rear sight with Continued on page 72





uger's rugged .357 Magnum pistol boasts exemplary accuracy right from the box, but even this advanced revolver can show dramatic improvement after master pistolsmith Mike La Rocca fine-tunes the magnum.

The pistolsmith from Massachucetts begins the upgrade by precisely installing a Shilen match-grade barrel on the GP-100 frame. As aesthetically pleasing as it is functional, the Shilen barrel is slab sided. The flats on the slab sides are perfectly straight, a mark of a master's touch.

Additionally, Mike LaRocca incorporates his remarkable *Rock-Port* compensator into the Shilen barrel. Featuring two large exhaust ports for maximum recoil reduction, the *Rock-Port* compensator is an expansion chamber design. This advanced engineering to thwart recoil and muzzle jump is proven to be the most effective.

Atop the slab sided Shilen barrel rests a Bo-Mar winged rib that includes the unsurpassed Bo-Mar adjustable sight in the rear. A butter-smooth action greets the trigger finger. Mike LaRocca painstakingly honed the GP-100's lockwork by hand to achieve one of the finest double action trigger strokes. Crisp and creep-free, the trigger has no back-lash thanks to an over-travel screw. To further facilitate double action shooting, the trigger is radiused and polished to allow the finger to roll smoothly through the trigger's arc, a proven method of attaining the best accuracy with double action fire.

The LaRocca custom GP-100 is handsomely finished with a matte blue barrel and rib contrasting with a special satin finish on the Ruger stainless steel frame.

This complete custom conversion of a client's GP-100 fetches \$585 and Mike LaRocca can supply a selected GP-100 as the basis of his custom work at an attractive price, which is obviously in addition to the cost of the custom work.

Mike LaRocca, LaRocca Gun Works 51 Union Place, Dept. AH Worcester, MA 01605

Photo by Roger Andrews

George Huening's

WORLD CLAS

rom the fiery Indy racetrack to the fast lane of professional handgunning, George Huening is a world class designer and engineer who builds winners. The chief mechanic who handbuilds championship racecars is also a master pistolsmith who sets the pace in high-tech handguns.

By Frank James Photos by Ichiro Nagata

On May 28, 1988 Christie Rogers won the Women's Championship of the 10th Anniversary Bianchi Cup. The next day, May 29, two-time World Driving Champion Emerson Fittipaldi drove the Marlboro Ilmore-Chevrolet March Indy car to second place in the Indianapolis 500.

Normally these two accomplishments would have significance only to those interested in both car racing and pistol shooting. Not much else in common between Christie Rogers and Emerson Fittipaldi, except on that weekend in May there was a common denominator.

Both Christie and Emerson won with









equipment designed and prepared in large measure by one man —George Huening.

George is chief mechanic for the Marlboro race team and also a remarkably talented pistolsmith. He builds a "modular pistol" with precise tolerances, tolerances that he learned to maintain in the life-ordeath arena of 200 mph racing. His modular pistol came about to fulfill a need among competitive shooters faced with a dilemma.

Some time back the Bianchi contest and the Steel Challenge were only a week apart. George's friends include some highly ranked professional shooters and they approached him with this problem. They explained to him how much simpler it would be to have a 1911 style pistol to go from one match to the other because shooting a revolver at the Bianchi after practicing with an auto for the Steel Challenge was a problem. The guns are different, they have a different feel. And the time for transition training was nil.

This resulted in the top competitors practicing with-two different guns with two different holds, two different trigger pulls, and two different sights making it difficult to master for even the best of the shooters. They discussed why the auto wasn't a good choice for Bianchi and George finally decided he could make one work.

George knew it would be tricky to properly utilize an optical sight on a semiauto because it can't be mounted on the slide. The other problem, he knew, was that the shooter could not utilize the barricades in the Barricade Event to their maximum advantage as a result of the reciprocating slide. It is these two factors, primarily, that have enabled revolvers to take command of The Cup.

The requirement was to make an auto function reliably with light loads, be as accurate (or more accurate) than a revolver, be designed so that most of the shooters could adapt to it rapidly, and enable the shooters to use the barricades to its maximum advantage.

George reasoned that the problem with the 1911 pistol is that the barrel locks up in the slide and this unit is separate from the frame. Hence, mounting the optics on the frame creates a shot-to-shot variance, so he reasoned it is necessary to eliminate the barrel locking in the slide as much as possible. In order to do that he extends the frame and locks the front of the barrel to the frame— not the slide— leaving only the rear of the barrel in the slide.

To make his modular gun shoot accurately he determined from the start that the tolerances had to be close and "repeatable." For this he uses the most modern equipment and techniques— in effect, he leaves the slide on the gun just to operate the action.

The slide is fitted extremely tight, but it is free because George grinds all the

frame rails on a surface grinder with only .001" clearance, just like the rod bearings on a very expensive racing engine. Everything is checked, especially the slide rails, as they are re-machined to dead-true. This eliminates the normal variation in slide rail dimensions.

The frame extension is silver-soldered to the receiver, although George did say he was going to attach the frame extension further back on future guns due to concern by some shooters over frame breakage. He says it's not necessary, but at the same time he doesn't want worried customers.

The barrel is mounted to this frame extension by a Messerschmitt bearing, what amounts to a ball bearing with a hole through it. The end of the barrel is threaded and the steel sphere is screwed onto the barrel.

The ball on the end of the barrel is ground on a radius grinder. This ball is made from 01 tool steel and is heat treated to 54 to 55 Rockwell. The sphere is designed to operate in the bore of the frame extension with less than .0005" clearance when cold, and to accomplish this the bore is precision honed. When the gun is fired, the metal of the barrel and ball warm and expand, thus the clearance between them becomes virtually zero.

The idea of the front ball mounting allows the gun to unlock at the rear in a

Continued on page 82



George has an uncanny ability to perceive the tiniest details necessary to create a winner. Here Emerson Fittipaldi and George confer.

Meet George Huening

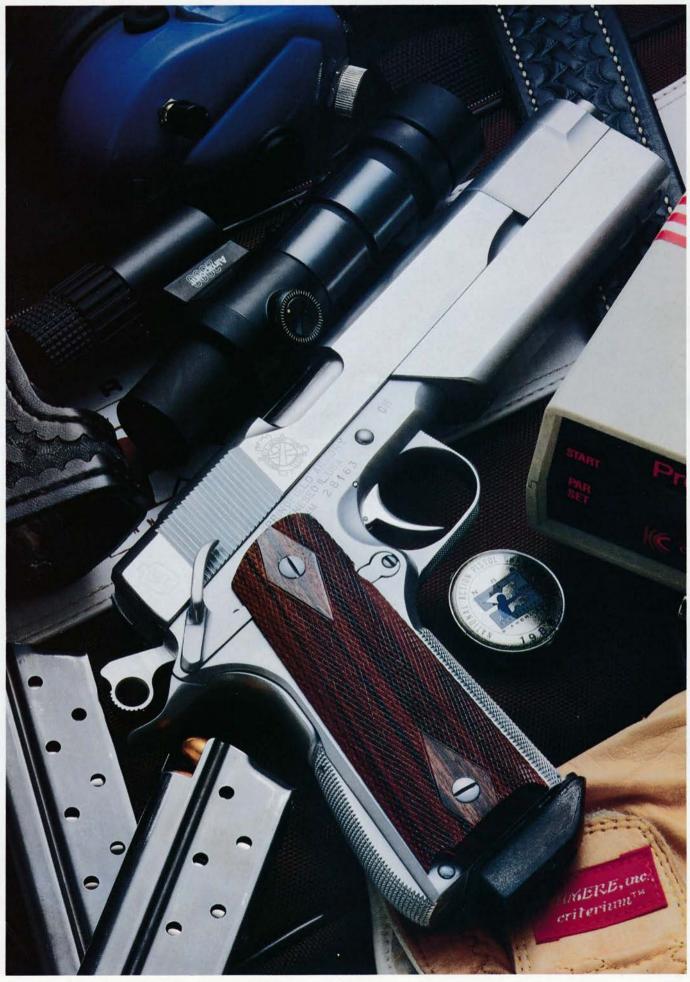
A uto racing is time consuming. The cars may be fast, and they may zip around the track in seconds, but the time it takes to build a race car is phenonemal.

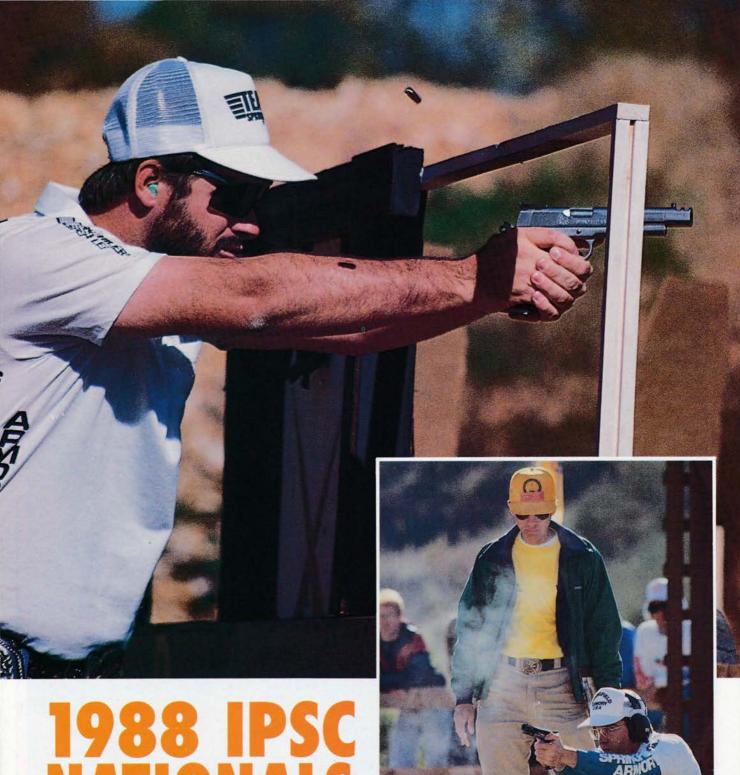
For those who build the cars, the sport leaves little time for families let alone any outside interests, like handgunning. But as George Huening says, "I always liked .45's." He was constantly looking at gun magazines and he remembers a specific issue of *American Handgunner* he found in an airport sometime in the early '80s while travelling to the next test track. It had a custom .45 on the cover, and he fell in love.

He was attracted immediately to the relatively new sport of IPSC and the recreation and competition it offered the shooter. Whether it is due to his occupation, his training, or his mental outlook, George is not one to hire someone to do something for him. He is the type of individual who, once his interest is peaked, he likes to do all the work himself. And so it was that he determined to learn about pistolsmithing.

He had a lightweight Colt Commander in .45 ACP (just a stocker for a carry gun, he says) but he went out and bought a brand new .45 Government Model and started chopping, cutting, checkering, filing, and rewelding (where he made mistakes) until eventually he finished

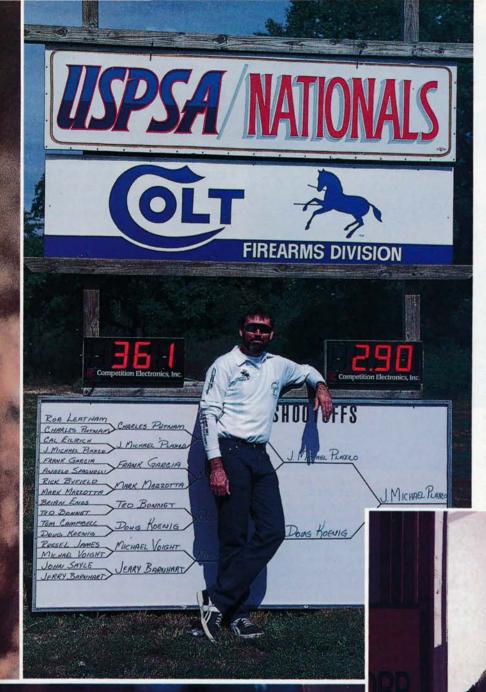
Continued on page 80





1988 IPSC NATIONALS

A startling new .38 Super Wilson Accu-Comp compensator, still in prototype form, wins practical shooting's top tournament in the hands of five-time champion Rob Leatham.



By Cameron Hopkins Photos by Nyle Leatham

It began in 1983. A Wilson Accu-Comp "C" shooting 200 grain .45 semi-wad-cutters won the IPSC National Championship in the hands of a most remarkable young man. The hold on the championship soon became a head lock that would do Hulk Hogan proud. Now, six years later the young man who people said was just "a flash in the pan" is now dominating practical shooting like the Packers once ruled the NFL.

The legacy continues today, still with a Bill Wilson customized 1911 pistol. While the young man has changed a bit—now a father of two bright children—his choice of gun remains basically the same. Specifically, his Wilson Accu-Comp "LE" now fires 130 grain .38 Super full metal jacketed slugs instead of the old .45 semi-wadcutters.

Rob Leatham won his fifth national title the old fashioned way—he earned it. The man shoots a phenomenal number of rounds in practice. Indeed, he puts bread on his family's table as a shooting instructor. He shoots for a living.

Since his first IPSC title in 1983, he also found time to win three IPSC World Championships, the odd Bianchi Cup and the occasional Steel Challenge. Rob Leatham is unequivocally the greatest all-

Rob Leatham (above, far left) shot the prototype of a new Wilson Accu-Comp. 38 Super into the winner's circle. Jerry Barnhart (far left) was second with a Nastoff. 38 Super while John Dixon (left) fired a 13-round. 45 on a Para Ordnance frame. Mike Plaxco (above left) proudly stands by the billboard showing the men he beat in the single elimination Top 16 shoot-off. One stage (above) required the shooter to carry his "buddy" to safety.



around shooter to ever hammer a Pepper popper.

is the heart of the new Accu-Comp.

Like his consistent shooting prowess, Rob's loyalty is unswerving to the pistolsmith he considers the best in the business. Bill Wilson has customized every pistol Rob has shot into the many IPSC winner's circles, beginning with that .45 ACP for his first win then switching to a .38 Super for the last four.

Bill Wilson's expertise at fine-tuning combat pistols has evolved over the years, just as Rob's skills have improved and the nature of IPSC shooting has changed. The gun that won in 1983 was the "C" model Accu-Comp, but Bill has since perfected the breed of compensators into today's highly efficient "LE" model Accu-Comp which sports one large, scalloped port in front of the muzzle instead of two small holes like on the old "C" model.

Rob's Accu-Comp for his fifth title fea-

Rob's Accu-Comp for his fifth title features an experimental double chamber in the Wilson-designed compensator. Standard "LE" models have one large expansion chamber, but Rob's prototype has two chambers and two ports separated by a constriction vent.

"It's not a lot better than the standard Accu-Comp, but it's a bit better," Rob commented, "And when you're facing this level of competition, you need every little bit of help you can get."

"If I can gain a tenth of a second on each stage of the match, that's more than enough reason to use the new compensator. Just look at the scores—the top guys are often separated by less than half a percentage point." Rob explained.

The .38 Super was virtually unknown as an IPSC caliber in 1984 when Rob popularized its advantages of greater magazine capacity, less muzzle jump and faster double-taps. He won again in 1985 and 1986 with his Super shooting 160 grain bullets at roughly 1150 fps. Along the way, the Super Wave caught on like nothing since Aimpoints at the Bianchi Cup (which, incidentally, Rob and his chum Brian Enos also pioneered).

There were some hairy moments for the Super as shooters discovered that certain

powders fluctuate dangerously from lotto-lot in burning rate. It became apparent that a "fully supported chamber" was necessary to contain the maximum pressures of these hot loads.

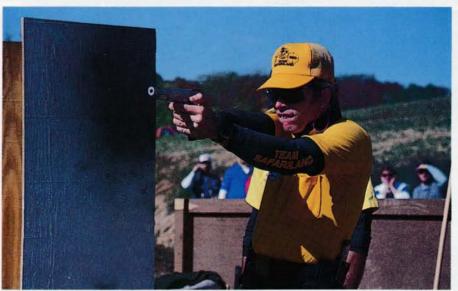
The custom .38 Super barrel began to appear with an integral feedramp that fully encloses the web of the case. This greatly helped to eliminate what Combat Master Mike Dalton once grimly called "Super Face." Super Face is what used to happen with the unsupported barrels when a case blew out the back—shards of brass flew back through the slot in the slide for the ejector, mincemeating the shooters face.

That was then, this is now. Since the epochal Year of the Super in 1984, shooters have experimented and discovered a number of suitable powders for heavy bullets at velocities far beyond the original intent of the cartridge. Shotgun powders like WW 473 and WW 540 emerged as favorites while Accurate Arms #7 and Hodgdon HS-7 also proved to be good propellants. Winchester was instrumental in documenting safe loads by pressure testing many of the early experimental powders and bullets, and the safe loads have been published over the years in *American Handgunner*.

But Rob and others have opened the door in to a whole new vista of the .38 Super. It began with .357 bullets, 158 grainers, but now the hot new trick is 9mm bullets, 130 grainers. Rob's matchwinning .38 Super shot Sierra 130 grain full metal jacketed bullets over the tournament's official chronograph at 1450 fps. (Power factor: 188.)

This is interesting because these 9mm bullets measure .355" while the Super's bore is nominally .356". Rob said that Wilson match barrels run slightly tighter at .3555" than Bar-Sto barrels at .3560" to .3565". The accuracy is better, Rob discovered, with the tighter Wilson barrels.

As you can see in the Guns and Gear of the Top 16, only two competitors fired the



Bill Rogers exhibits the sort of intense concentration necessary to reach the pinnacle of performance. He fired a .38 Super Wilson Accu-Comp.

.45 ACP and of the majority who shot a Super, six out of 14 used these new 9mm lightweight bullets.

The muzzle blast is tremendous with these wee bullettes at screeching velocity. "Once you get over the noise, you got it made!" quipped fourth place finisher Mark Mazzotta.

All of the pistols in the Top 16 were customized 1911 models with the exception of Tom Campbell's rather basic, uncompensated S&W 745. But a few gadgeteers shot their latest trick guns in the match. John Dixon fired a .45 ACP with the new Para-Ordnance 13-shot frame. This is nothing more than a conventional 1911 frame with a widened grip to accommodate a 13 round, double-column magazine.

Another interesting high-capacity gun comes from a talented pistolsmith with an unusual background. Otto Matyska skedaddled out of Czechoslovakia in 1968 when Soviet tanks rolled into Prague and brought with him a remarkable knowledge of firearms engineering that he learned while working for Brno and Steyr. Otto has designed a new frame for the Government Model slide that accepts an 18-round .38 Super magazine.

Otto also has a straight blow-back .38 Super for shooting light loads in speed matches like the Steel Challenge. It kicks like a .22 with the 95 grain bullets loaded to a sedate 750 fps. Woe betide the guy who muddles up his ammo and fires a hot IPSC .38 Super round in this unretarded action!

Speaking of the Steel Challenge, 1988 winner Chip McCormick was on hand at the match to display his new 1911 Model hammers and sears. These excruciatingly correct parts are cut on an EDM machine for ultra-precise tolerances.

Chip is already receiving rave reviews from the country's top pistolsmiths over these "drop-in trigger jobs." You can simply pop out your old hammer and sear and install Chip's parts to obtain an instant trigger job, dropping a five-pound pull down to two, two and a half pounds and crisp as crackers.

Innovation was not limited to the guns. Holster impresario Bill Rogers was pleased to see his newly designed Final Option holster widely used by competitors. This clever new holster features a unique trigger guard locking device that permits the gun to ride freely in the holster, no friction, no rubbing.

The patented Thermo-Laminate construction— a plastic-leather sandwich—allows the Final Option to be molded into any cant or angle simply by heating the holster's belt-attachment paddle and molding it to your liking. Neat holster.

Of course the *ne plus ultra* of speed holsters is still the enormously popular Ernie Hill design called the "LE" for Leatham/Enos. (Perhaps Ernie should change the name because Brian Enos drew his Wilson Accu-Comp from a Safariland Final Option rig.) Hill's speed scabbard is also a layered affair, a sandwich of steel and leather. Low cut and slick, the Hill holster was worn by eight of the top 16 finishers, more than any other single brand of leather.

The choices of pistolsmiths by the top 16 finishers suggests that Bill Wilson is the man if you want a winning gun. Bill's Accu-Comp conversions captured over 30% of the top slots including the winning position. Only one other pistolsmith, Ed Brown, saw more than one competitor shoot his wares. Two men fired a Brown Maxi-Comp. The Guns and Gear of the Top 16 shows the other pistolsmiths, each with one shooter firing their gun.

While the top guns may differ on their selection of pistolsmiths, most agree that the Springfield Armory M-1911A1 is the pistol of choice. Over 60% of the top 16 fired Springfield guns; Colt claimed the

rest of the top spots with the sole exception of one nonconformist Smith & Wesson 745.

N inth grade health teacher Debby James from Bristol, Conn., is the 1988 IPSC United States Ladies Champion. Debby rolled off a stunning victory in Caracas, Venezuela where she captured the coveted title of Ladies World Champion to continue her march to victory in Quincy, Ill. The year before she had won her first ladies national championship on the same range.

"My only strategy was to do my personal best. I was having a lot of pressure from last year's title (1987 Ladies National Champion) and just winning the World. I just wanted to have fun," Debby said when asked how she approached the match.

Debby, like Rob Leatham, shoots a .38 Super in a highly customized Accu-Comp "LE" model from master pistolsmith Bill Wilson. She draws her Metaloyed finished pistol from one of the remarkable new Final Option speed holsters from Safariland.

Her load is one of the new lightweight 9mm bullets, a 130 grain full metal jacketed slug blasted out of Remington +P brass with an undisclosed charge of Accurate Arms #7 powder.

The two-time ladies champion emphasized that she uses magnum small *pistol* primers in her loads as she explained that some shooters prefer small *rifle* primers, which the best practical shooting woman in the world pooh-poohs.

Debby is undaunted by shooting against men on an equal basis. Finishing 100th overall out of 414 contestants, Debby is an attractive lady who controls her bucking .38 Super surprisingly well for her small stature.

Shooting against some Amazonian Continued on page 91

	GU	NS AND	GEAR C	F THE	TOP 16	
SCORE	SHOOTER	PISTOL	CALIBER	BULLET	PISTOLSMITH	HOLSTER
100.00	Rob Leatham	S. Armory	.38 Super	130 gr.	B. Wilson	Ernie Hill
94.22	Jerry Barnhart	S. Armory	.38 Super	130 gr.	S. Nastoff	Final Option
92.63	Brian Enos	S. Armory	.38 Super	170 gr.	B. Wilson	Final Option
92.28	Mark Mazzotta	Colt	.38 Super	130 gr.	B. Wilson	Final Option
91.57	Mike Plaxco	S. Armory	.38 Super	170 gr.	M. Plaxco	Ernie Hill
90.94	Frank Garcia	S. Armory	.38 Super	160 gr.	E. Brown	Ernie Hill
89.62	Doug Koenig	S. Armory	.38 Super	125 gr.	F. Behlert	Ernie Hill
86.61	Russell James	Colt	.38 Super	130 gr.	B. Wilson	Ernie Hill
85.44	Michael Voigt	S. Armory	.38 Super	130 gr.	M. Voigt	Ernie Hill
85.24	Tom Campbell	S&W 745	.45 ACP	230 gr.	W. Novak	Rogers Custom
84.70	Angelo Spagnoli	S. Armory	.38 Super	143 gr.	B. Gray	Ernie Hill
84.42	Cal Elrich	Colt	.38 Super	160 gr.	G. Wise	Ted Blocker
84.39	Rick Byfield	S. Armory	.38 Super	155 gr.	L. Baer	Final Option
84.08	Ted Bonnet	S. Armory	.45 ACP	200 gr.	G. Ferris	Ernie Hill
83.60	John Sayle	Colt	.38 Super	150 gr.	B. Wilson	Final Option
83.52	Charles Putnam	Colt	.38 Super	162 gr.	E. Brown	Final Option

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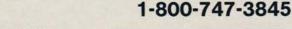
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LYMAN ACCULINE FURNACE An inexpensive melting pot for bullet casting

By John Taffin

When I started casting bullets over 30 years ago, I had an understanding mother and, later, a wife who put up with my lead pot and a dipper on the kitchen stove. However, my wife was overjoyed when I purchased a Lyman bottom-pour pot and moved out of the kitchen taking all that mess and smell and smoke with me.

For lo these many decades I have been using three different Lyman bottom-pour pots with my main pot now being a Lyman Mould Master (20 lb. capacity pot) that allows me to run two moulds at a time and turn out quality bullets very quickly. I would not go back to the old way. Ever. For any reason. Well, maybe.

Lyman has a new Acculine Furnace kit that consists of a 10 lb. electric pot with heating element, a dipper, a mould ingot and a wire metal base. The retail price of the kit has not been established, but Lyman informs me that it will be in the \$35-40 range.

The price is low for two reasons: this is not a bottom-pour pot, but requires a dipper be used to move molten metal from pot to mould; and there is no adjustable

thermostat. The pot is designed to supply continuous heat from any standard household electric supply.

It works! Using a two cavity mould, I cast about 100 bullets without any problems with proper bullet temperature. If the bullet metal gets too hot, it would be a simple matter to simply unplug the pot for a few minutes and let it cool down. With a little experience this will be easily monitored.

I'm not going to give up my large capacity, bottom pour pot. However, I can see a number of uses for this newer, simpler system. When I need a few bullets, especially from a single cavity mould, I can quickly obtain a supply without having to set-up my large furnace.

For those who do not have an elaborate bullet sizing and lubricating system, this pot can be combined with some of the new moulds that are designed to cast bullets to be shot as-cast with the application of liquid lube. And finally, this pot will be perfect for black powder shooters who cast their own.



HYDRA-SHOK

Continued from page 45

the .357 and .45 the loss is small and is entirely due to fragmentation of the jacket where it is scored by the rifling. As it peeled back some small pieces of jacket were lost. Given the high velocity of the .357 load, this isn't too surprising and a loss of six grains isn't particularly significant. It's even less so in the .45 and when you consider that the bullet expanded to over 3/4" in diameter. That is the most impressive degree of expansion I've seen to date in any .45 load.

The Hydra-Shok line is broadest in the 9mm Luger with three offerings. The standard 124 gr. load, a +P+ load using that same bullet which is available only to law enforcement, and something new for the 9mm, a 147 gr. load that deserves special attention.

One logical consideration when attempting to increase penetration is to simply increase bullet weight and several years ago some of the Federal law enforcement agencies proposed that a heavier bullet might be helpful.

Much of the original work was done by Winchester and they now produce a +P+ 9mm with this heavy bullet. Federal decided to include the 147 grainer in their Hydra-Shok line and when they began loading it they found that pressures were only slightly above the limits for commercial ammunition. They were still too hot for civilian sales but the difference was so small, only about 2000 PSI, that a project was begun to see if the pressure levels could be reduced without sacrificing velocity. A change in the powder and primer used in the 147 gr. load produced the desired results and civilian shooters will be able to purchase this new loading.

Initial production was loaded in cases carrying the +P+ headstamp and some of this may get into commercial channels, but the ammo is emphatically not loaded to +P+ levels and may be used. Subsequent production will be in cases that are marked the same as other civilian 9mm ammunition.

It's almost impossible to tell the difference between the two bullets by looking and the only visible clue I could find was the location of the cannelure on the cartridge case. With the longer 147 gr. load, the cannelure is much closer to the rim than on the 124 gr.

When I first saw the Hydra-Shok bullet design, I wondered if the post would have any significant effect on accuracy. The pressure of a deadline and limited supply of ammunition didn't allow as much accuracy shooting as I would have liked and the number of different guns used contributed their own variations. But it's safe to say that the accuracy of the Hydra-Shok ammunition is equal or better than conventional hollowpoint bullets regardless of caliber.

In fact, the Llama M-82 which was used for some of the 9mm shooting positively loved the stuff and consistently shot groups that were in the 2" range at 25 yards which was far better than its previous accuracy.

In the .38 Special I could tell no difference between groups of other 125 gr. hollowpoints and the Hydra-Shok ammo. Both shot extremely well.

In short, I've concluded that accuracy is not something to worry about.

It would be easy to hail this new ammunition as the solution to all defense ammo problems which, of course, it isn't. The truth is that Federal's Hydra-Shok is the current state of the art against which other ammunition must now be judged. It will not solve problems of poor marksmanship (remember there are no magic bullets). Nor will it lay to rest the ongoing arguments of 9mm vs. .45 or revolver vs. automatic. What it will do is provide ammunition that has a combination of good expansion and penetration for most of the popular handgun calibers.

TAFFIN TESTS

Continued from page 43

not have the strength that is built into the Freedom Arms .454.

Anyone that has experience loading the other magnum revolver cartridges (.357 Magnum, .41 Magnum and .44 Magnum) should have no trouble reloading the .454 Casull. The .454 is a straight-walled revolver cartridge that is a tenth of an inch longer than standard .45 Colt brass.

However, there are procedures for reloading the .454 Casull that must be followed for complete success. Other revolvers will accept casually assembled reloads; the .454 Casull will not!

Reloads must be specifically tailored to fit the chambers or the reloader could find himself with a large quantity of ammunition that won't fit the precisely line-bored chambers.

The Freedom Arms .454 Casull is built to exacting tolerances; reloaded ammunition must be assembled the same way. Three areas in particular are critical: 1) the resizing of fired brass 2) the selection and seating of primers 3) the selection of bullets, and in the case of cast bullets, the sizing thereof.

First, the resizing of brass: Reloading dies for the .454 Casull are designed to

full-length size the brass to fit the tight chambers of the .454 Casull. Because of the pressures involved with full-house loads, cylinder chambers are reamed to minimum tolerances to contain the brass as much as possible when loads are fired. Thus, fired brass must be brought back to a size that will enter the chambers freely. Sizing dies made for the .45 Colt will not, in all probability, full-length size .454 brass small enough to allow the sized brass to enter the chambers, nor provide a tight friction pull on the reloaded bullet.

Freedom Arms .454 dies are also designed to provide a crimp that will hold under heavy recoil.

Primers must be seated flush, or even below the top of the primer pocket on the head of .454 Casull brass. Failure to do so will result in a high primer that will bind the cylinder at best, and prevent rotation at worst.

A precision seating tool separate from the reloading press is recommended for the seating of primers. All .454 brass of current manufacture is designed to accept small rifle primers. Rifle primers are designed to handle the pressures of top loadings in the .454 Casull; pistol primers may be used for lighter loadings.

Bullet selection for the .454 Casull is critical. Jacketed bullets designed for the .45 Colt may be used in the .454 Casull with complete success *if* they are used properly. None of these bullets are designed for the velocities possible in the .454 Casull and there is the possibility of .45 Colt bullets coming apart under high pressures.

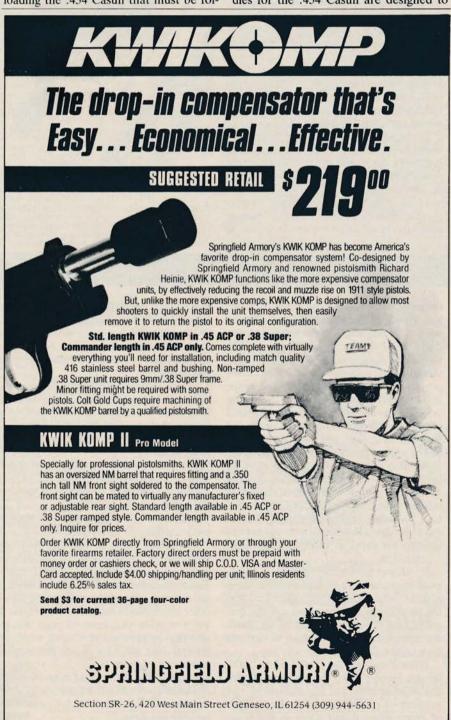
Jacketed bullets for the .45 Colt that are used in the .454 Casull should be kept at velocities of 1600 fps or less. Excellent results using .45 Colt JHP bullets from Sierra (240 grain), Hornady (250 grain), and Speer (260 grain) can be attained if they are used reasonably.

I prefer these .45 Colt bullets at velocities of 1600 fps for use in silhouette shooting.

Freedom Arms offers three jacketed bullets that have been designed to withstand the pressures of full-house loads in the .454 Casull. These bullets are offered in a 240 grain JHP, and 260 and 300 grain JSP. All of these bullets have jackets that are a full .032" in thickness plus a hard alloy core that allow developing .454 loads to their highest potential.

These Freedom Arms jacketed bullets are designed to prevent base deformation at the time of firing and allow the bullet to enter the forcing cone intact, thus reducing wear and producing the highest possible velocities. These same bullets, due to their inherent strength, will hold together and give the deepest penetration on big game.

The Freedom Arms .454 Casull, with its 1:24 twist barrel, is a natural for heavy-weight cast bullets. My favorite loads are assembled using 300 and 325 grain bullets in the 1200 to 1500 fps range. Either H110 or WW296 is used starting at 23.0 grains



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for these particular loads.

Cautions are again in order in selecting cast bullets. Bullets designed for the .45 Colt may be used but some of these lose accuracy with high velocity loadings. They were simply not designed with enough bearing surface to allow them to be shot at velocities approaching, and often surpassing, 2000 fps in a revolver.

It is a matter of experimenting with .45 Colt cast bullets to see at which velocity levels they will perform accurately.

A good case in point is the Lyman #454424 Keith bullet. This is an excellent bullet and a favorite of .45 Colt shooters. When used in the .454 Casull, the best results will be obtained with muzzle velocities from standard .45 Colt loadings up to around 1600 fps.

Freedom Arms offers Lyman mould #454628GC exclusively. This mould gives a 255 grain flat-point, gas-checked bullet that is specifically designed to function with the operating pressures of the .454 Casull and should be used when a 255 grain bullet is desired in full house loads for the .454.

Chambers of the .454 Casull are *tight*. Bullets must be sized accordingly. Most resizing dies are tapered, allowing bullets to be sized larger at the shoulder end of the bullet than at the base. Cast bullets for the .454 must be completely sized to .452" or .451" their entire length or they will not allow the loaded round to be

chambered as the bullet will not enter the chamber throat.

Some bullets, such as NEI's 310, 325, and 350 grain Keith semi-wadcutters have large full caliber shoulders and will not enter the .454 chambers unless they are loaded with the brass crimped over the front of the driving band.

Freedom Arms also provides a Lyman mould #454629GC that yields a 300 grain flat point, gas-checked bullet that is designed specifically for the .454 Casull. This mould, like #454628, is only available from Freedom Arms. Because of its bearing surface design and gas check feature, this 300 grainer can be used in the .454 Casull to a full 1800 fps with excellent accuracy.

Two real heavyweight bullets that deliver maximum performance in the .454 Casull are SSK's #345.451 and LBT's #452350GC. Both of these bullets, weighing in the neighborhood of 340 to 360 grains depending on the alloy you use to cast them, have wide, flat noses for delivering maximum shock.

The .454 Casull is a reloader's dream come true with the ability to deliver outstanding accuracy with both cast and jacketed bullets at velocities from a mild 800 fps loads up to a blistering 2000 fps and even beyond.

A wide range of powders are applicable to the .454 but only H110 and WW296 should be used in assembling full-house loads. The use of faster powders in trying to achieve top velocities will result in very high pressures and possibly ruined brass. Save other powders for the lighter loads,

At the other extreme, do not try to use H110 and WW296 for light loads. The result can be squib loads in certain weather situations, such as extreme heat or cold, and even dangerously high pressures. Use these two powders only for full magnum loadings of the .454 Casull.

Inquiries are received often as to where one can obtain heavyweight bullets for the .454. Two reliable sources of cast bullets are Bullets By Bridges (Box 31742, Dept. AH, Amarillo, TX 79120) and Dailey Specialty (6980 E. Camino Encinitas, Dept. AH, Tucson, AZ 85715). Bridges offers the 310 grain .45 Keith bullet, while Dailey offers the Keith style in 310, 325 and 350 grain weights plus LBT designs in 350, 380 and 400 grains.

Having used cast bullets from both of these custom casters, I can attest to their high quality.

For those who cast their own, contact these firms for prices and specifications on .45/.454 molds: SSK Industries (721 Woodvue Lane, Dept. AH, Wintersville, OH 43952); Lead Bullet Technology (P.O. Box 357, Dept. AH, Cornville, AZ 86325): NEI (P.O. Box 249, Dept. AH, Canyon City, OR 97820), and Freedom Arms (P.O. Box 150, Dept. AH, Freedom, WY 83120).



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PERFECT TEN

Continued from page 47

extensive testing would have shown the average velocity to be substantially higher than the 1193 indicated. In any case, it is probably safe to say that Norma's current 170's are somewhat softer, and substantially more consistent than the original production ammo.

Colt's advertisements for the Delta Elite feature a chart showing the 170 grain bullet at 1300 fps. That is pretty close to right on. The new production Norma is only 18 fps short of that, and I defy any person or animal to detect an 18 fps difference when shot. The Hornady 170 grainer actually came in hotter than that, with an average of 1336 in the Colt (1243 in the Bren Ten). So, Colt's advertisement is based on realistic numbers.

In 200 grain bullets, both the Hornady and PMC were remarkably consistent, with extreme spreads of only 11-12 fps in both guns! Both registered an average of 1053 in the Bren, and 1121 in the Colt (actually 1121 for the Hornady and 1122 for the PMC, if you want to quibble).

At the other end of the weight/velocity scale, Hornady offers an ultra-light 155 grain hollow point, which put out 1352 fps in the Bren Ten, and 1386 in the Colt. Because of its light weight, this is naturally the fastest ammo tested. Whether it offers

the most stopping power is another question, which we will address later on.

Two other loads were tested: Ammo Specialists is a commercial reloader which offers a newly-manufactured practice load, with a 170 grain lead semi-wadcutter in new Midway brass, in front of enough Blue Dot powder to produce 1032 fps in the Bren Ten, and 1152 in the Delta Elite. That is well over "Major" for IPSC shooting.

with six wicked-looking teeth. The teeth grab the wood bowling pin, even on edge hits, where other bullets would bounce off. It is possible that it has applications for self-defense and hunting, but it is a bit pricey to be used for practice. Serious bowling pin competitors will probably use a 170 grain SWC, like the Ammo Specialist version, and save the Pin Grabbers for match day.

We don't really know what causes "stopping power." The key is that no matter what formula you use, the 10mm comes out at the top!

The IPSC power factor is determined by multiplying weight X velocity, and dividing by 1000. "Major caliber" is defined as any combination of weight and velocity that produces a factor of 175 or greater. The Ammo Specialist load, while softer than the hot factory 170's, still produces a power factor of 175 (Bren) to 195 (Colt).

The other load tried was the Pin Grabber, from Kaswer Custom. This round, also known as the "flying buzzsaw", was designed specifically for shooting bowling pins. The bullet is a jacketed hollow point, The Pin Grabbers averaged 1146 out of the Bren Ten, but my supply was limited, and I ran out before having a chance ot test them in the Colt. Based on the results with the other 170 grain loads, you could probably expect another 100 fps from the Colt.

What about "stopping power?" How does one measure stopping power? Some people swear that Kinetic Energy is the best indicator. I am not one of those, and I am dismayed that magazine articles and advertisements constantly show Kinetic Energy, as if it meant anything.

Still, we have freedom of religion in this country, so for those who worship at the altar of Kinetic Energy, note that the Hornady 170 grain JHP produced the most energy of the loads tested, 674 ft/lbs, and that this is higher than the .45, 9mm, or even the previous energy king, the .357 Magnum.

You can calculate energy with your own pocket calculator, by multiplying weight (in grains) times velocity squared (in feet per second), and dividing by 2. Then, since there are 7000 grains in a pound, divide by 7000 to convert "foot-grains" to "footpounds," and finally, divide by 32.16, which is the "constant of gravity" at sea level.

General Julian Hatcher, dissatisfied with Kinetic Energy as a measure of stopping power, devised his own formula, which he called Relative Stopping Power (RSP). It is similar to the KE equation, with three differences.

First he multiplied weight times velocity, instead of by velocity squared. This naturally de-emphasized the importance of velocity. (That is one of the defects of using KE; a very minor difference in velocity can make a big difference in energy.)

Weight times velocity equals momentum. Then he multiplied the momentum by the frontal area of the bullet, to take into account the effect of bullet size. Everybody who ever got through the ninth grade knows that area equals "pi R square". (Remember? "But, pop," said the farmer boy, "pie are round.") For Pi, you don't need a lot of decimal places. 3.1416 is close enough, and 3.14 will do just fine if you are in a hurry. "R" is the radius, or half the diameter. Be sure to use inches instead of millimeters. The radius of a 10mm bullet is not 5, it is half of .40 caliber, or .2 of an inch.

Finally, Hatcher multiplied the whole shebang by an arbitrary factor for bullet shape and material. Based just on gut feeling, he said that a lead round nose bullet was "1," and everything else was either better or worse than that.

For the accompanying illustrations, I assumed that a JHP was 25% better than a lead round nose, so I used a shape/material factor of 1.25. I assumed a factor of 1.05 for the flat pointed full metal jacket bullet, and .90 for jacketed round nose "hardball." If you have a favorite bullet shape or material, you can use any factor you like.

The 10mm loads with the best RSP turned out to be the 170 JHP's, again. Not that any of them are bad, since they all rate higher than the .45, 9mm, or .357 Mag-

These days, the popular buzzword among stopping power theoreticians is "energy transfer" (or "energy dump"). When confronted with the obvious abusrdities of using Kinetic Energy as a measure of stopping power, they nod knowingly and solemnly declare that energy transfer is the real key. That is convenient, because they offer no formula for calculating Energy Transfer, and we are asked just to take their word for it.

The formula does exist, however, and it was proposed years ago by French ballistician and physicist M. L. Josserand. Alert ballistic historians will even note that this formula was casually mentioned in one paragraph by Hatcher, in his Textbook of Pistols and Revolvers.

It is quite simple. Calculate the Kinetic Energy. Multiply it by the area of the bullet. That's all there is to it. This formula is nothing new. It is the same formula used by engineers for years, to predict damage from automobile crash impacts, or to measure the ability of a cereal box to protect the corn flakes within; to measure the potential power of a tennis racket, or to measure the size and speed of a wrecking ball needed to take down a wall.

Josserand's Energy Transfer formula is what I personally use when evaluating ammunition for self-defense carry. Hatcher's formula, in my opinion, underrates the .357 Magnum in comparison to the .45. Kinetic Energy over-rates the .357. The Josserand formula rates them both about the same, which is consistent with observed reality.

Based on the Energy Transfer formula, guess which 10mm loading performs best. You got it: the 170 JHP's. And note again,

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that all the 10mm's outperform the 9mm, the .45, and the .357.

Of course, we must also consider controllability. The .44 Magnum outperforms everything else as far as stopping power, but it is a poor choice for self-defense, because it is too difficult to control in rapid fire (except in monster guns).

Speaking subjectively, the 10mm is harder to control than the 9mm. It is slightly more difficult to control than .45 hardball, and about the same as, say, .45 Super Vel. It is distinctly *easier* to control than a .357 Magnum in a mid-frame revolver, like a Smith and Wesson Combat Magnum, or a Ruger Security Six.

There is only one other valid method of measuring stopping power, and that is empirical observation of results on the street. This method has many pitfalls, however. There are so many variables that it is probably impossible to ever come up with observations that a true scientist would consider statistically valid. There are not all that many shootings to go on, and the great majority of those cannot be entered into the database.

For example: a police officer was shot in the chest with a .32 auto. He returned fire, striking his assailant in the chest six times with a .45 auto, stopping (and killing) him instantly. We can count the .32 as a "failure to stop," even though, tragically, the officer died several hours later. But, the immediate stop with the .45 can't be entered into the statistics, because there were six shots. There is no way of knowing whether one shot would have been sufficient.

For example: a police officer, using a 9mm, fires at a man standing in a doorway. The man returns fire, then runs out through the back door. Blood is found on the door frame. Failure to stop? There is no way to tell, because the blood could have been from a bullet hole in the little finger. Later, the suspect is spotted in some bushes. Numerous officers open fire, with multiple shots (all 9mm's). They wait several hours before approaching the suspect, who is found dead. Instant stop? There is no way to tell; he may have slowly bled to death, and been conscious and dangerous the whole time.

For example: a man fires one shot at a holdup man, striking him in the chest. He and two eyewitnesses tetsify that the holdup man went down instantly. Instant stop? Not necessarily. Any trial lawyer will tell you that eyewitnesses are notoriously unreliable. The two eyewitnesses also testified that they heard multiple shots, even though only one round was fired.

In fact, the only positive way to gather empirical stopping power information would be to only count those shootings that were (A) one shot, (B)—to the thorax, and (C) were recorded on videotape! And then, we would never have a large enough sample to be statistically valid, would we?

One recent study of cartridge performance used statistics based on as few as five shootings! That would earn a "D" on a high

school science project.

Just before I wrote this sentence, I flipped four coins: a penny, a nickel, a dime and a quarter. I flipped each one five times. The penny came up "heads" three times out of five. So did the dime. The nickel came up "heads" twice, but the quarter showed "heads" four times! Now go put those numbers into a graph and try to convince your science teacher that, when it comes to a flipping "heads," pennies and dimes are 60% effective, nickels are 40% effective, and quarters are 80% effective. Absurd! Five samples prove nothing.

What we can do empirically is watch for verified failures to stop, and try to arrive at some useful, intelligent, general conclusions, without trying to be accurate to three decimal places.

The case of the .32 auto cited above is an example. That seems to happen a lot with .32's. Whether it happens 90% of the time, or 50% of the time, common sense tells us it is probably too darned often to rely on the .32 for self-defense.

We really don't know what causes "stopping power." We have a good idea of the factors involved: velocity, weight, size, shape, and material; but we are not sure how much importance to ascribe to each factor. Hence, all the different formulae, using the same factors, in different proportions.

The key is that, no matter what formula you use, the 10mm comes out at the top!

It's true: nobody has actually been shot with the 10mm so far. But so far, nobody has been shot with the new .22 "CB" or with the .357 Maximum, either! Which of those two do you think has better stopping power? The point is, we can make intelligent inferences. There is such a thing as "common sense."

It is reasonable to expect that the stopping power of the 10mm will be equal to, and probably better than, anything else you might carry. If you are going to carry a 10mm for self-defense, any ammo on the shelf matches or exceeds any other moderate-recoil caliber. The 170 grain loadings in particular seem to be optimum. You can carry the 10 with confidence.

S&W AUTOMATICS

Continued from page 56

match-class silhouette but total freedom from drag and snag, should be standard by 1989. The 3-dot system will be standard, and plain black will probably be optional. The excellent Third Generation adjustable sight with protective wings will carry into the adjustable sight versions of the 3900, 5900, and 4500 series.

The conventional bushing has been scrapped in favor of an integral one on all four models. Preliminary testing, at least with the .45, indicates that this may significantly increase accuracy without compromising reliability.

The four-digit guns comprise no fewer than 23 subtle and overt changes. The firing pin has been made thicker and more break-resistant; we'd been seeing the occasional stainless pin let go. All will now come with IPSC-style rubber base pads on the magazines, and bevelled mag wells. While I'd like to see at least one mag flatbottomed for better concealment, this can be achieved by simply using an older-series magazine for the older gun, which will fit. The change was made less for IPSC shooters than for cops, who reported that concealed carry of spare mags caused the sharp metal flange of the floorplate to dig painfully into their ribs, a shortcoming to which this writer can attest.

The right-side ambi safety lever of the 3-digit guns epidemically worked loose. S&W thinks they have this problem solved with a T-slotted design on the four-digit models. I hope so.

One point not mentioned at the lavish S&W press conference in Springfield was the magazine release button. In the past, S&W combat autos had a four pound spring in this critical part that was widely subject to accidental release. I sampled nearly two dozen 69s, 59s, and 45s and all felt much more stiff, a satisfactory Coltlike 8 pounds or so. A wise and life-saving move, one for which I applaud the firm.



Stainless frames are held on a magnetic conveyor as they are polished by this machine. An S&W worker supervises.

The new guns are better than the old ones. Much better. But I left the Springfield think-tank conference far more impressed with something else new: the current management attitude in the corporate suites of the 134-year-old gunmaking firm.

My personal acquaintanceship with varying generations of S&W management goes back to 1964. I've known them as friend and foe, as a cop and a gunwriter,

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a consumer and former stockholder. Always the attitude was "Smith & Wesson can do no wrong, and only the ignorant would criticize us." Sort of a "What's good for General Motors is good for the USA" mindset.

It got worse under Bangor Punta's stewardship, and worse yet under Lear Siegler's. My BP stockholders' reports bragged about things they didn't mention to consumers, like the fact that production had increased several hundred percent in the same factory with the same machines and the same three shifts of workers. Generations of craftsmen, whose family history included working the machines of Smith & Wesson, began to give way to affirmative action employees more interested in their paychecks than a heritage of quality.

Under Lear, Siegler it became worse, with the mass callbacks of L-frame revolvers perhaps representing the nadir of the parent company's attitude toward QC. The bottom line dollar, not a finely crafted handgun, had become the goal. Gunsmiths and S&W armorers told horror stories of S&W autos that came out of the box filled with metal filings and parts that had not been deburred. The Smith & Wesson handgun, once the standard of quality, was degenerating into raw material for custom gunsmiths.

The purchase of Smith & Wesson by the United Kingdom holding company Tompkins in 1987 was a watershed. The British

manufacturing ethic has always been, "We shall make the finest and longestlasting product, of the absolutely finest quality. The discriminating world market will recognize this, and pay a higher price for this greater long-term value and pride of ownership."

Tompkins entered the hallowed halls of S&W management, and was shocked by the totally opposite attitude that the previous parent firms had left behind. Their first priority was a sweeping revision of quality assurance systems. The motto became a Ford-like "Quality is Job One."

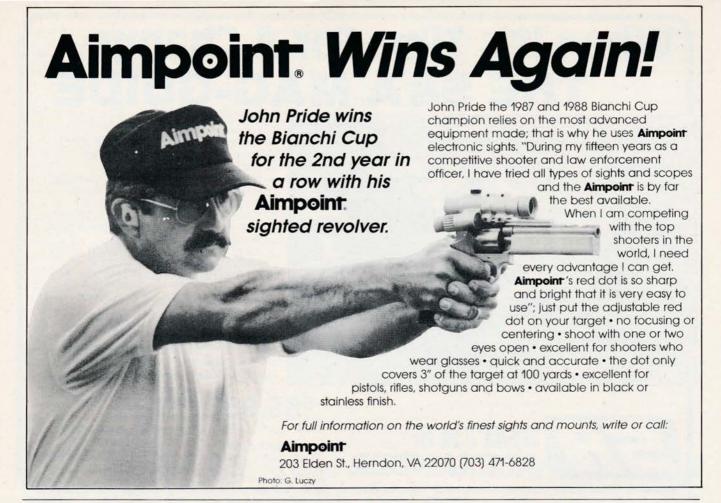
I had toured the S&W plant several times over the years, most recently in the early '80s. Nothing had seemed to change. But the 1988 tour was different. New equipment and new attitudes flourished. Japanese-like "quality circles" of concerned employees had formed. The new president, seasoned manufacturing exec Steve Melvin, had appointed Warren Tomek director of a huge new quality assurance program.

Melvin and his management team recognized that S&W would have to maintain its current production levels, and that multiplying production rates under the old system and layout had led to the precipitous drop in quality that had so hurt the old-line firm's reputation. The solution was to rapidly expand the use of state of the art machinery and robotics that had begun under Lear, Siegler. CNC (computerized numerical control) equipment

abounds. Machining operations once performed gun by gun are now performed simultaneously on a pallet of 18 frames at a time, monitored by incredibly precise CMM (coordinate measuring machines) by Zeiss. Greater speed, and more important, inhumanly greater accuracy now marks the production of the 79 component parts of each centerfire auto pistol, including the 69 operations that create a slide and the 89 operations required to produce a single frame.

he new management team's insistence on excellence goes beyond hardware. For the first time, marketing execs were encouraged to beat the ground and truly listen to consumer complaints, especially from law enforcement. In 1984, sales of semiautomatic pistols in the US surpassed those of revolvers for the first time in history, and as the new market burgeoned Smith & Wesson suffered a paralyzing indentity crisis. The once and future king of revolver sales (50% of the market, followed distantly and respectively by Ruger, Colt, Charter, and a powerfully accelerating Taurus), the firm was horrified to realize that their dominance of the auto pistol market was by no means as large: only a 35% cut.

Moreover, the competitive auto pistol makers were marketing much more aggressively than the competitive revolver manufacturers. They also had more to offer. Almost every competitive gun had a



smoother action and felt better in the hand. Quality and ergonomics were the two things that had to be improved. S&W employees today joke about the "quality police," the QTF or Quality Task Force with up to 50 supervisory personnel alone, whose primary duty is to inspect all components and finished guns, and reject any that don't meet the newer, higher standards. The space-age computerized trigger pull tester that helped design the 4-digit auto pistols is now used to test *every* handgun that is shipped from the Spring-field factory.

Tompkins, Ltd. and Steve Melvin want S&W to wipe the tarnish off its QC reputation, to bring its quality back where it once was. A quality that ranks with the traditions of Burberry and Rolls-Royce, of Rigby and Holland & Holland.

They seem well on their way. Time will tell.

The new guns, whether you call them third generation or fourth, represent a quantum leap ahead of previous S&W pistols in terms of ergonomics. They feel much better, their rounded butts carry much more discreetly, and their once abominable double action trigger pulls have become a joy, with a smoothness that equals or exceeds the more expensive SIG and Beretta and challenges that of the Brno CZ.

Reliability is excellent, accuracy seems improved, the price is more reasonable

than most of the big-name imports, and the guns are stainless. The 3-digit S&W's with a "6" in their model number, then and now, have different alloys for slide and frame to alter the molecular structure sufficiently to prevent the galling that was always the bugaboo in the long bearing surfaces of auto pistols made of stainless.

Some 850 American law enforcement agencies now issue Smith & Wesson semiautomatic pistols. A staggering 1,000 more have ordered test samples of the new-generation guns, many putting their auto pistol projects on hold until the test samples can be obtained.

We asked the company about the long-awaited .45 auto in mini-gun configuration. They estimated a September 1989 introduction but explained that research and tooling might take longer, especially if a surge of interest in the currently available new guns was to tax the production line. When the mini-.45 comes out, it will not be too many months away from the prototype now known as the Model 449, a compact 9mm Mini with slim, single-stack magazine that won't be much larger than a SIG .380.

Interestingly, S&W Academy's feedback is that most cops would much rather have a compact pocket 9mm, while that of the police writers and gunwriters was that the scaled down .45 concept generated much more interest from their readers. Fortunately, these are not mutually exclusive projects. The promotional S&W shooting jackets given free to purchasers of square S&Ws were, of course, designed to clear the shelves of the previous generation guns. This seems to have been quite successful. I'm not sure there'll be any left by the time your 3900, 5900, 6900, or 4500 reaches your dealer's shelf.

If you have a 645, I'd keep it instead of trading it in. With only a four-year production run, it's destined to be one of the rarer Smiths that actually reached the market, and it's a superbly reliable weapon, the first factory double action that would feed any commercial .45 load from SWC softball to the 200 grain Speer hollowpoint and the Glaser Safety Slug. That tradition will continue with the 4506.

You may run across a new-generation S&W .45 with the frame stamped "645" instead of "4506." A few of these transition guns got out of the factory—very bloody few. They'll be "keepers" in the rapidly burgeoning S&W collectors' market

Do not be surprised if the compact S&W .45 you see down the road markedly resembles the chopped and channelled custom guns produced by West Virginia pistolsmith Wayne Novak. S&W has relied heavily on Novak's expertise, and credited his input repeatedly during the press conference we attended. This is another welcome departure from the corporate attitude of the old-line S&W execs. The "not invented here" syndrome that

once characterized this firm has had a stake driven through its heart by Melvin and his bosses at Tompkins, hopefully for good. By reaching out to gunsmiths and dealers, to cops and civilian consumers, S&W has opened its doors to its market and thus to its future.

After two intensive days at Smith & Wesson, two sentences I'd heard stuck deeper in my mind than anything else. Rich Mackney, director of law enforcement sales, told us in a relieved voice that the lines of communication between S&W and the cops was at last a two lane highway. "Let me tell you the two comments I heard again and again," he told us softly, "When our test officers, representing more than 1300 police departments, tested the new guns, most of them said first, 'Fantastic!' And then most of them said, 'You finally listened.'"

The final words that echo come from S&W president T. Stephen Melvin. "It's a joy to me to pick up one of these guns and know it's the final product of this company. I want to hear back from the people who use them, police and civilian. My door is always open to them."

The change is a welcome one. The Quality Task Force promises equally palpable improvements in the revolver product line, changes that will be seen and felt in the guns leaving the factory by the end of last quarter '88.

The 4-digit auto pistols are more than dramatically improved pistols. They rep-

resent a change in a great gunmaking institution's attitude toward the people it serves.

As I write this, a pistol sits beside my typewriter, its stainless finish a dull satin like all the new S&W's of its type. It's a 4506 from an early transition run, its frame marked "645" and bearing the serial number TBU4953. It fits my hand superbly and puts every bullet in a hole the size of a quarter at seven yards, two things no S&W .45 ever did for me before.

Like the others of its ilk, its trigger guard has been advanced forward a couple thousandths of an inch to adapt it better to gloved hands, and thus it doesn't quite fit any of my existing leather. But Smith was scrupulous about getting samples out early to the holster-makers, and I'm sure I can order one immediately.

I think I will. I learned long ago that my job was people more than it was guns, and this sleek new pistol symbolizes the fact that Smith & Wesson has also finally realized that this is true for them, as well.

And no matter how good it feels, no matter how well it shoots, there's something special about a gun made by people who care.

SHOOTING THE NEW S&W AUTO PISTOLS

Continued from page 55

pistol trend, will issue the 5900 series to road troopers and the 6900 series to detectives.

How has the gun stood up? As predicted by the factory, the half cock notch has been removed from late '88-onward production guns, thus erasing the one glitch that could barely be felt in the new, super-smooth trigger pull. I've heard one unconfirmed report of an ambidextrous safety coming loose, but have not seen it myself. The new design is much stronger than the ambi on the three-digit models, which began to unscrew itself practically as soon as you started shooting.

These new S&W's at first had sharp edges on the frame behind the trigger guard and on the slide in the ejection port area. The first was a minor irritation to the shooting hand, the second a possible snag in something like a soft fabric holster. By November four-digit S&Ws were showing up in gunshops with those edges slightly rounded, and the firm is looking at rounding them still further. The new policy of "Smith & Wesson Listens" is holding on so far.

The guns have now gone through a whole lot more hands, and are working

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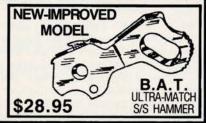
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out well. One of my own 4506's has gone about 2,000 rounds of factory and quality remanufactured .45 ACP ammo with no malfunctions. I am not surprised. Tom Campbell of S&W tells me that each .45 auto is now testfired with a magazine of 185 grain semiwadcutter midrange target (an infamous jam producer in service autos), two of assorted hollowpoints, and another mag of ball plus the single "proof load" before leaving the factory. Those 33 rounds per gun make it, to my knowledge, the most thoroughly factory-tested .45 in existence.

The new guns are continuing to group extremely well, and the star of that show is the service-size 9mm (3900 and 5900 series). It's not any more accurate than the .45 or the compact Nine, but the difference is more noticeable.

The 469/669 Mini Gun was the first to get the new bushing design, and it improved accuracy so much that it became the first little gun in history to shoot better than its big version. The same concept carried through to the 645. When these guns turned into the 6904, 5906, and 4506 respectively, the bushing design stayed the same.

Accuracy should have, too, but the fact is, the new guns shoot better for me and for virtually everyone I've talked to. The better hold and superior triggers have to be the reason. Shooting a mint 645 against a randomly selected 4506, both with the same excellent Federal 185 gr. jacketed hollowpoints, the four-digit gun's group was 77% the size of its predecessor's. Strictly the human factor. Ergonomics. The difference between inherent accuracy and practical accuracy.

The reason the change was so marked in the service-size Nines is because the old ones had no lockup to speak of (39, 59, 459, etc.) and the 5900 series shares the same new barrel/bushing design as the rest of the latest generation. Comparing an excellent-condition 659 with my test 5906 with Federal 9 BP hollowpoint—consistently proven the most accurate Parabellum load around, and coincidentally also, one of the best stoppers in its caliber—I found my 5906 group only 58% as big as the one I'd fired with its predecessor gun. Improved mechanics plus improved human engineering at work.

Consider these comments from users of the older generation guns:

*"It shoots better than my 745. I'm ordering one." This from a confirmed user of S&W's .45 single action target pistol, after trying my fixed sight, double action 4506.

*"I've never had a gun that shot this well for me, or one that fit my hand as well." This was a police chief who'd switched from a Model 59 to a 669 to a

*"I want to see what kind of deal we can get on a complete trade-in." This was the chief of a department that issued 645s, upon handling his first 4506.

*"The way it shoots, it's hard to believe

it's a service pistol." The speaker was the owner of a Model 52 Master S&W precision target auto that fires only .38 wadcutters, who had just beaten me down to Second Master in a match in which I was shooting a box-stock 4506 in Boston.

s the corollary article states, there are three major factors that set the new design S&W autoloaders apart from the old, in addition to the improved accuracy of the service 9mm's: better feel in the hand, vastly improved trigger pulls, both single and double action, and a marked improvement in the factory's quality control.

During the tests at the factory, IPSC maven Walt Rauch and I were able to shoot one-hole groups with both 9mm and .45 Third Generation guns, double action only with the decocker being flipped after each shot. I've tried that several times since, and encouraged friends and students to do the same. The results have not changed. The ragged, grotty trigger pull of a 469, 659, or a 645 makes the trick all but impossible, and the slick DA pull of a 6904, 5906, or 4506 makes it a piece of

I've not yet seen anyone accidentally release the magazine on a Third Generation Smith, including a cop friend who wears one daily in a left-handed Ted Blocker uniform holster. With the older models, this was a frequent occurence, and epidemic with southpaws because the magazine release in the portside holster was exposed to all manner of bumps that could accidentally drop the mag. Smith's quiet change from the old 4 lb. release spring to the approximately 8 lb. one in the new models is one I've been velling for since several years ago, and one I'm delighted to see finally accomplished.

Most users love the new 3-dot sights. The 659 and 639 in particular were notorious for their plain white steel front sight that disappeared under many light conditions. By the time you read this, guns will be leaving the factory with the streamlined Novak sights. Most users will prefer this look, though the writer likes the first design because that straight-leaf rear sight gives you something to hook onto your belt if you're injured and have to work the slide one-handed.

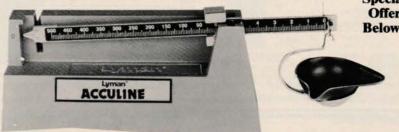
Reliability is right up there. My chief of police has about a case of ammo through his four-digit without a single malf. A police lieutenant of my acquaintance is rapidly gobbling his way through his first thousand rounds of .45 ACP and told me, "The 4506 didn't jam once on a factory load. A buddy of mine gave me some old handloads that were so badly sized they didn't even want to go into the chamber. Most of them still fired. And the ones that wouldn't feed? I just racked the slide and the gun kept shooting.'

The padded magazines are another selling feature. I find that they stay on so long as the mags stay in the pouch. When carried in the loaded pistol on the belt, they

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rub annoyingly against your jacket lining and hike up the hem of your coat to expose your pistol, or bind so frequently on the seat cushion when you're wearing a duty holster that the pad quickly comes loose. The ungluing of mag pads was always the curse of this accessory on IPSC mags, and it is no surprise that it should follow to the factory produced versions.

I carry my 5906 with a Model 59 mag in the gun, and one or two padded 5906 mags as spares. I've adopted a similar pattern with my more frequently carried 4506: the pistol is loaded with a latest-generation 645 mag so the polished steel floorplate can't interfere with clothing or upholstery, and padded 4506 mags ride on the opposite hip.

Magazines, incidentally, were the biggest problem with the old 645. They went through several design changes, and one or two S&W production workers apparently had a penchant for installing the magazine springs upside down. The new mags appear to work well. I've had one crack appear on the right rear feed lip of a 4506 mag, but it still works (and even ejects) perfectly. It's now in the "training" pile.

The leather drought for the new guns is almost over. Holstermakers have adapted to the longer trigger guard design. My own 4506 rides daily in an LFI Concealment Rig in plainclothes, and an SP-100 thumb-break duty holster when in uniform. Both are by Ted Blocker.

When a friend called Safariland recently about police holsters for S&W .45 automatics, he was asked casually, "Old model or new model?" It may be a while before they pile up on the dealers' shelves, but the holsters are definitely available.

A fter the gun magazine publicity blitz on the Third Generation guns, anyone who owned one was inundated with questions about them from fellow cops and shooters. I had four on hand, and some of them spent more time in other people's fists than in mine, from the New Hampshire State Police weapons testing team to civilian sportshooters. The following questions were the ones most commonly asked.

Can my older S&W auto be upgraded to encompass all these features? The answer is "Yes...but." A seasoned pistolsmith who is intimate with the S&W product, or a top-line graduate of the S&W Auto Pistol Armorer's School, would indeed know the subtleties of machining that would allow him to alter your "second generation" (three digit model number) to take the new internal parts and accept the new grip design. The problem is, by the time all the parts were purchased and all the labor was done, you'd have saved precious little money. Buying a new one is quicker and more cost effective.

Will the new S&W 9mm pistols handle the new wave +P and +P+9mm ammo?" You bet. So will the last generation with the three digit model numbers.

Was S&W influenced by SIG when they designed the grips? They sure feel like a SIG. Ooh, what a tacky question! That's like asking if the L-frame revolvers were influenced by the Colt Python, just because they fit the same holsters and take the same speedloaders and have identically shaped barrels. It's, um, a coincidence! Yes, that's it! It's a coincidence that a Model 5906 fits a SIG-Sauer duty duty holster perfectly. Yeah, that's the ticket . . a coincidence. My girlfriend Morgan Fairchild, whom I've seen naked, says the SIG and Smith grip similarity is merely a matter of chance. (Seriously, though, so did the 659, and the old model 59).

The new S&W
autos aren't
just showhorses,
they're shooters.

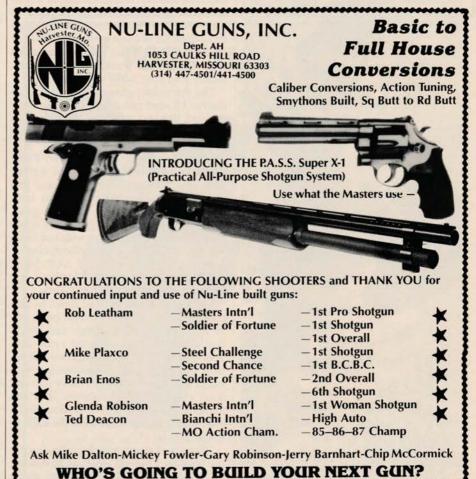
Suffice it to say that the most common remark you hear about the new generation S&W's is that they are SIG-like. Given the excellence of the SIG-Sauer pistol—in terms of reliability and overall quality as well as the trigger smoothness and the feel in the hand—the comparison is a positive one.

Will the old magazines work in the new guns? Yup. For years, at least until the bad runs of 645 "clips," S&W made better magazines than they did pistols. Not only will the old ones interchange with the equivalent new model guns, but I think it's a good idea for concealment and snag free carry. Even with the butt pads removed, you can tell them apart: the new ones will have mag release cuts on both sides of the magazine body.

This is because, until the very last minute, S&W had intended to have a convertible magazine release (like the, ahem, SIG-Sauer) but decided that the compatibility with the millions of older magazines floating around out there was more important. I agree. Any seasoned southpaw shooter can tell you that a left-hander works a right-handed magazine release more deftly than a rightie, anyway.

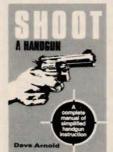
What about suggested modifications? The internal design allows some wideranging options. A highly skilled armorer or pistolsmith can theoretically convert the pistol to double action only, with the hammer decocking itself between shots. I might just have that done to one of my 4506s, if only as a teaching aid for students who have difficulty mastering the





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long first-shot stroke on a double actionauto. I've found the best fix for that problem is the trick of running rapid fire DA strings, decocking between shots, and such a pistol could be an excellent "remedial tool" in that it would eliminate the distraction of constantly thumbing the decocking lever.

Similarly, any S&W Auto Pistol Armorer can convert your pistol to selective double action/cocked and locked capability, a la the Czech CZ 75 or the Taurus PT-99. If you had but one gun to carry on the street (where DA first shot makes sense) and to shoot in matches (where cocked and locked first shot is the near-universal choice), this modification would hold interest. Of course, you'd have to hand-lower the hammer. The prototype three-digit S&W I saw in the late 1970's at the Illinois State Police range was so modified. These mods would, of course, completely void your S&W warrantee.

The three-dot sights cry out for tritium inserts. I'll send one of my 4506's to Trijicon and, like you, will have the slide back in less than 10 days with the night sights fully installed.

Grips are another option. I'll try Pachmayrs as soon as they come out for the 4506; the 5900 and 6900 fit my hand fine as is but many readers will rather have neoprene. Alone among the new guns, the 4506 seems to shift very slightly in my fist during one-handed fire with hot loads like the CCI 200 grain hollowpoint at 1,000 fps that I favor in a .45 ACP. S&W will be offering an optional flat-back grip that removes some of the .45's girth.

I've had one pair ground down to that configuration, and they're nice, but a tiny bit of slippage between finger and Delrin is still palpable in one-hand rapid fire. Tom Campbell of S&W suggested dropping the grips into a sandblaster with rough #30 grit if you want tacky feel and don't mind a loss of esthetics. I'm still thinking Pachmayr. The 4506 does feel a little bigger in my hand than the Colt or the SIG-Sauer .45s.

Why didn't they springload the decocking lever so it would work as fast as the SIG? S&W seriously considered doing this, and it would have rendered what was once a safety latch into a decock lever, period, as on the late Steyr GB. Civil liability makes it unwise to remove a safety device from a pistol. And, I'll tell you, I agree with S&W on leaving it a manual safety. As the S&W brass brings their product to more and more police seminars, they're finding more and more cops who are alive because someone got their old S&W automatic away from them, tried to shoot them, and couldn't because the gun was "on safe." I've always been a strong proponent of using the safety catch on these guns, not treating it like a decocking lever as many trainers suggest. I expect to see a trend back to pistols with manual safety catches, and I think S&W can see that coming, too.

Why did the price have to go up? As

they say in Massachusetts, "There's no free brunch." AIP, the Automatic (Pistol) Improvement Program, cost Smith & Wesson deep into seven figures in research and tooling. For all that, the new guns still are priced very competitively with the two foreign designs that are their primary competition. The increase is around \$50 per gun. A lot of companies will step up their price that much or more without improving the product. I think the price is fair. So do the hordes of police departments who are currently knocking on S&W's door to discuss these guns.

When do the new compacts we've been hearing about come out? At the end of last summer, S&W was telling us that it would be a year before we'd see the compact .45 that is to the 4506 what the Officer's Model is to the Colt Government. Now we learn that a short production run will have been completed by the SHOT show of January '89, with the Walther PP-size single-stack version of the 9mm 439 to follow. We're told the .45 will be a true 8-shot, seven plus one.

A bit over three months after the introduction of the new generation S&W autoloaders, I put a group of four cops through a qualification with their new Model 4506 pistols. Three of the four shot "personal bests." Those three had never fired the new guns for the record until that day. They had previously carried a Model 13 revolver, a Model 659, and a compact Model 669 respectively. The fourth scored the same 100% he normally did, and was delighted with the new pistol's handling, commenting "It feels like my SIG, only with a safety."

Months of use have shown that the new S&W autoloaders aren't just showhorses. They're shooters.

GEORGE HUENING

Continued from page 60

the gun. He lamented that the whole process took him almost three years to build the gun

The endless hours devoted to his racing business ate much of his spare time, but he said it came out pretty nice and, viola, he had himself his first IPSC gun.

No sooner had he finished this first gun, after all those months of interrupted work, and compensators came out. He decided he just had to have one of those, so it was back to the drawing board for a compensator of his own design.

He said one of the more difficult problems he encountered during this period was learning where to get the tools and special parts necessary to build a good gun. His work was good enough at the very beginning that other shooters in the Indianapolis area started requesting work from him in his spare time.

This demand soon would have developed into a full-time business if George had the time available to answer it. But racing took up his time with long hours and weekends, so he had to turn down many requests for guns. However, the quality of his work did shine through for someone with so little experience in the shooting sports.

He was also blessed with the friendship of some very experienced and accomplished professional IPSC shooters who had a strong interest in auto racing. It was the feedback from these shooters that gave George a valued insight into which direction he should head with new ideas.

Even with the pistols Huening builds, he studies every gun as if it were a \$300,000 Indv race car.

"Between what I figured out myself, and talking to those people to get pointed in the right direction, I have learned more in five years than what most guys would in 10 or 15," George said.

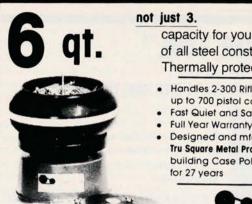
Another reason George Huening has advanced so rapidly with his pistolsmithing ability is his background in auto racing. He attributes two specific advantages to his background because, he says, "I can't drive the race car."

Today many Indianapolis racing teams have armies of people with various engineers, mechanics, designers and so forth, George grew up in an age of auto racing when the chief mechanic did all tasks required—the engineer, the designer, the mechanic. "I, like all the people of that era, was everything," George reflected.

The result of this was an ongoing and direct commentary between the driver and George with the driver describing what characteristics the car was displaying. The driver didn't really know what to do with the car. It was the mechanic who made the decisions that improved the car's performance and George had to do this through the driver. He had to feel what the driver was feeling and improve the machine through him.

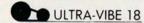
George attributes his skill at building good guns to this quality of interpreting "the driver's observations" because he can understand what the shooter is experiencing. He can do this because, he states, "Not being a driver or a world class shooter myself, I've developed that ability over the years of being able to understand what other people are feeling just through conversation.'

This is one of the advantages George Huening credits to his racing background



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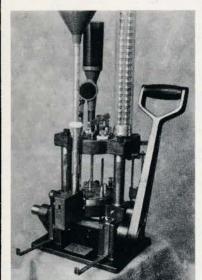
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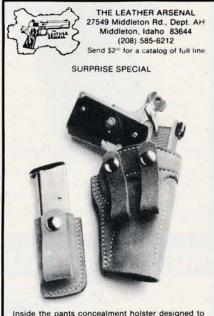
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Massad Ayoob on Leather Arsenal products
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Leather Arsenal is second to none!" - Massad Ayoob

that makes him a superb pistolsmith. He has been able to visit with some of the best shooters in the world and learn what the IPSC and NRA Action guns require while at the same time acknowledging that he is not a top competition shooter himself.

The other advantage George credits to his background is the ability for analyzing problems because, to him, that is what auto racing and building competition pistols is all about. He explains that problem analysis with auto racing is extremely difficult because of the sheer number of variables. Track conditions? Is there enough rubber laid down in the groove? Is it windy, and if so in what corners? What is the track temperature and the tire temperatures? Is the car handling good going into the corner, coming out, or down the straightaway? In addition the personal likes and dislikes of different drivers also make a big difference.

Yet even with the pistols he builds he studies the details of every gun just as if it were a \$300,000 Indy car. "I don't start doing something because somebody says that's what you do. I can't accept that. I have to take what they say, listen to them, and then I have to try and see if I agree with them. I'll pick everything apart. Look at it, change it, and put a lot of thought in anything before I'll do it. Because I don't feel I can do it properly until I understand how the whole mechanism works," George says.

Gordon Johncock won the Indianapolis 500 driving a car prepared by George in 1982 with the closest margin of victory in Indy history, a mere .16 of a second, over another driver (and shooter) by the name of Rick Mears. George and Gordy also won the National Championship in 1976.

George has worked with the best in Indy car racing including Mario Andretti, Kevin Cogan, Johnny Rutherford, Al Unser, Bobby Unser, and presently twotime World Driving Champion Emerson Fittipaldi.

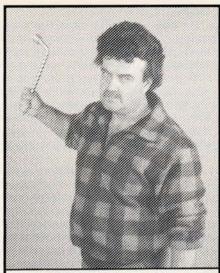
George says one of the things he likes about IPSC and NRA Action shooting is the competition, because competition has been a way of life with him. And George Huening literally has the track record to back up that statement.

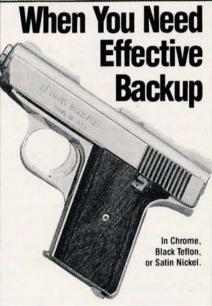
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Continued from page 60

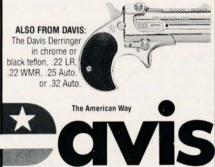
normal fashion as the barrel is able to tilt and move forward and rearward, yet the barrel returns to the same point of lockup every time. This eliminates half of the error experienced when the slide locks both the front and the rear of the barrel.

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George is quick to point out that the precision fit of this design is so close that a dimensional error of .001" can result in a shot dispersement of 3/8" at 50 yards.

The Huening Modular Pistol in these photos is a .38 Super with an unsupported barrel for light target loads. George would prefer to work with the "fully supported chamber" barrels for the .38 Super because he feels he can hold the tolerances better to build an even tighter gun.

He also wanted to emphasize one very important point— he did *not* build the complete gun that Bill and Christie Rogers used in the Bianchi Cup. He did the entire modular conversion, but it was Buzzy Clifton who fitted the pivoting trigger, checkered and finished assembling the Rogers' guns. George feels Buzzy should get the credit he deserves. George is now doing the pivoting trigger conversion that Buzzy and Bill Rogers developed.

However, it is important to emphasize that the gun seen here is totally the product of George Huening's labor and no one else's.

The components George used to build this modular gun include many of the same parts and materials used by many other gunsmiths, but there is a difference in his approach. In fact, you could say that his philosophy of custom gunsmithing borders on heresy. In an arena that is hailed for handbuilt-this and handmadethat, George stands apart. He scoffs at handwork.

He doesn't place a great deal of faith in the idea that totally handfitted parts and guns are superior to modern technology. He raises a noteworthy point when he states, "Doing everything by hand when building a gun is a fallacy. Where would this world be today if we still did everything by hand?"

He believes strongly in *precision*. Using state-of-the-art machinery and equipment in the manufacturing and assembly of critical parts produce much closer tolerances and, more importantly, maintain "repeatability" better and easier over those parts that are hand fitted with a file and a stone.

This is not to say there is no handwork on this pistol. This gun started out as an ordinary Springfield Armory 1911-A1 in 9mm, and examples of the handwork can be seen in the checkering. The flawless rows of sharply pointed diamonds jut from the frame's steel. Perfect ranks of precise, handcut spires, all done with a craftsman's touch at 20 lines per inch. The front and bottom of the trigger guard is checkered at 30 lines per inch, and George did the slide serrations at 40 lines per inch.

The machine work comes into play with the re-machining of the frame and slide to make sure everything is straight. The slide is shortened by .750". George uses a Bar-Sto barrel to replace the factory barrel. The length of the Huening Modular gun requires the use of a full length guide rod and here George uses a Wilson guide rod



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A modified King grip safety was used on this gun, but George acknowledges there are many good grip safeties on the market. He prefers the old Safari Arms style which has a more pronounced "kickup" than the Wilson, but it is not as high as the Brown. The Safari Arms style puts a substantial amount of pressure, but comfortable pressure, on the top of the hand over the web and this helps in recovery of the muzzle flip.

He uses a Swenson safety for several

reasons. The first is the weight of the

name. Many manufacturers have copied

the Swenson, but Swenson was the first

with this style and George feels he de-

serves the credit. Add to this the fact they

are well made. "When you see one of

those safeties, you call it a Swenson.

When a guy is spending the money to have a Swenson that's what he is going to get

and full length spring.

from me," George says.

He concedes, however, that there is merit in the Brown design that allows the shooter to get a little higher grip on the gun, but a lot of this comes down to each individual's preference and falls into the area of personal preference.

An arched mainspring housing was used because George believes the flat mainspring housing may feel better, but the geometry of the situation favors the arched mainspring housing as it helps in keeping the muzzle straight. The arched mainspring housing helps keep the wrist straighter and there is less of a "moment" trying to break the pivot of the wrist during the recoil. Or, in plain language, there is less mechanical advantage on the gun against your wrist with an arched mainspring housing.

To him this is one of the small details that helps win competitions and it comes from physics and geometry, not subjective judgment.

The mag well on this gun was given the standard bevel treatment as magazine changes during the Bianchi Cup aren't a big thing because the competitor has plenty of time. Normally George does either one of two different approaches on his IPSC guns. He likes the Ed Brown Maxi-Well even if it is expensive. George must shorten the grip portion of the frame and silver-solder the Maxi-Well to the gun, but it does give an extremely large grip well.

The other alternative is homemade. George makes a mag funnel of his own design, but it is not a slip-on. He attaches it to the mainspring housing and states it is very similar to what most of the other gunsmiths are doing with the only disadvantage being it extends down a little further and therefore requires a longer magazine pads. But it adds weight in a good place: far back from the muzzle so the gun still points well. Another advantage is some guys simply like the way it feels in the hand as it shortens the grip a little.

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The pivoting trigger is the one developed by Rogers and Buzzy Clifton. The pull weight on the trigger of the gun in these photos is 17 ounces. Of course that light weight comes at the expense of a lot of trigger travel, like on a revolver, but the amount of travel and the pull weight can be adjusted. Changing the leverage will shorten the travel, but it will also increase the pull weight so, all things being equal, the longer the travel the lighter the pull.

Jim Kelley at Metalov was the man responsible for the plating of the Huening Modular pistol, and George is a devoted customer of Metaloy. George believes there is an advantage in faster sight acquisition when both the frame and slide are plated because the eye can pick up the

contrasting sights quicker.

Another item contributing to the handsome appearance of the Huening Modular pistol are the Hogue grips made especially for this pistol by Aaron Hogue. The fit is perfect and the checkering flawless in detail.

George has been so busy with racing and gun projects he readily admits he has had little time to develop loads for the modular gun, but he did have the information on the load Bill Rogers used in the '88 Bianchi Cup. Bill Rogers used 4.3 grains of Bullseye behind a 125 grain jacketed Sierra bullet and it was this load that Rogers used to put six shots in a group measuring 7/sths of an inch at 50 yards from the prone position.

One of George's ambitions for the future is to analyze the whole cycle of a 1911 pistol using computer-aided technology similar to what the Indy racers use to design 200 mph race cars. He wants to build a dynamometer for pistols that will be a test bed for measuring all the force impulses on the gun, including the torque of the projectile, the muzzle flip over a fulcrum (to simulate a wrist joint), and the time spans involved using load cells and some pretty sophisticated oscilloscopes.

This will enable him to see in graph form exactly what the different forces are, and be able to measure them at the same time in both tenths of a pound and milliseconds. He would like to know what is the slide velocity, how long does it take the hammer to fall, actual lock time, and

how fast will a gun cycle?

George Huening's gun business is World Class Pistols, Inc. and you can reach him there at P.O. Box 288, Dept. AH, Brownsburg, IN 46112 (telephone (317) 852-0013). If he achieves half the success in pistol competition that he has enjoyed as a builder of Indy race cars, he will become a prominent pistolsmith on the competition scene. As a testimony to his abilities, he is even building a modular conversion for his friend and famed pistolsmith Steve Nastoff.

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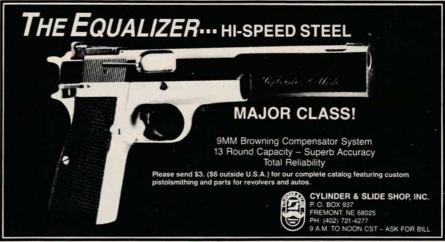
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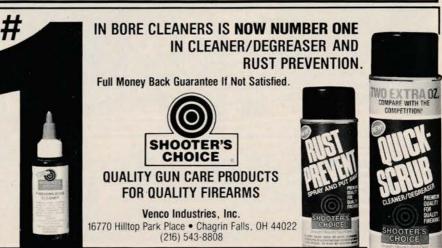
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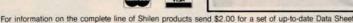
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THE AYOOB FILES

Continued from page 38

even had time to remove his black, sidehandled PR-24 baton, a tool not normally employed for SWAT, hostage rescue, or barricade seige operations.

There are at least three firearms inside the beseiged residence. The .44 Magnum is in Trott's hand, fully loaded. There is a .22 rifle that the angry man inside seems to have forgotten about. Finally, there is a 20 gauge Stevens single-barrel shotgun that he has loaded and laid aside, ready for the showdown he announces he wants to have with the police.

Suddenly . . . a shot!

The outside team is prepared to rush the house in a last-ditch "positive entry" to save the survivors if Trott has started killing people inside. Then they are ordered to hold back: Nanette Trott, on the phone, says he has fired the gun by accident, into the living room floor, and no one is hurt.

The negotiation continues, led by Littleton PD's Detective Paul Creadon, who has come on the phone line at 1:30. It will later be learned that John Trott has often bemoaned that he was not born a hundred years earlier, in a time he felt more befitting a man of his kind. He has often fantasized out loud about dying in a shootout with police. Now, he's verbalizing it again.

His oldest son, 14, has taken advantage of a lapse in John's attention to grab the .44 Magnum and run out of the house. He's now safely in protective police custody. So is the revolver. Trott is now armed with the shotgun, and he is furious.

During the course of the negotiation, he will threaten no fewer than 19 times to kill himself, to kill cops, to force the cops to kill him, or to make them all die with him in a blaze of glory.

"Where's my gun?" he rants at the detective. "We play the game! I walk out (with my gun) and we take it from there!"

The detective tries to calm him. His words fall on ears that don't want to hear. "You don't f--k with me, my gun don't come out," Trott yells at the detective over the phone. "Ya f--k with me, and I'm gonna blow the s--t out of everybody I can get my hands on!"

At one point, Trott staggers out into the darkness, stepping off the porch with the shotgun in hand. The SWAT men wait in concealment, their weapons levelled and ready, as Trott waves the 20 gauge. On the phone, Creadon is telling Mrs. Trott to grab the two remaining children and escape out the back door.

BLAM! Another shot. Trott has fired a blast of birdshot in an undetermined direction. No officers have yet been hit. They choose to hold their fire. Then the dangerous interlude is over: Trott, still holding the shotgun, shambles back inside. Nanette has not yet had time to get the kids out the back door. The stalemate continues.

T-ott is on the phone again. He is demanding his .44 be returned to him, implying that he needs it for a proper showdown. Creadon explores returning it to him if he will in turn let Mrs. Trott and the children go. No deal.

Her hulking spouse distracted again, Mrs. Trott manages to get her hands on the shotgun and shove it behind the stove,

out of sight.

When John comes back from the phone and finds the shotgun too has been spirited away from him, his fury is boundless. He grabs a folding knife from the top of the refrigerator and snaps open the 21/2" blade. "All right," he yells, "If they don't want me to fight with a gun or if they don't want to duke it out, I'll use my knife!" He grabs the phone and growls at Creadon that he's going to come out. His final snarl is recorded on the police tape: ". . . and you bastards better be ready to fight!"

As he heads for the door, Nanette tells Creadon what's happening. He asks if John has any weapons. She replies that he has a knife. Creadon snaps to the dispatcher in radio contact with the police containment team, "Tell them he's got a knife!"

But, outside, it's already going down.

Part of the SWAT function is having a designated arrest team ready to roll if the barricaded suspect suddenly decides to go mobile. The SWAT commander gives the order over the radio to make the arrest. Ray Rickert, leader of the arrest team, hears that order and barks, "Let's go," just as Black sees Trott coming out of the house with something in his right hand.

The cops fan out to take him as Trott moves rapidly on his collision course with the officers. Patrolman Jim Wolf maneuvers swiftly between Trott and the house, his .357 in his holster and his AR-15 in his hand. Now that the hostage taker is finally away from the woman and the two children, he will not be allowed back in under any circumstances.

The remaining four officers are Rickert, Black, Harris and Patrolman Arlan Kluth. The latter has his AR-15 up and ready, and the others have levelled privately owned, department approved Colt .45 automatics that they, like half the department, carry as standard sidearms.

Black and the others are shouting commands now. "Drop the knife! You're under arrest! Calm down and drop that knife!"

John Trott drowns them out. He screams back, "Bastards, come and get me! Come on and get it, bastards!"

He's coiled in a half-crouch, shoulders forward, quick and amazingly sure on his feet for a man who's supposed to have had a lot to drink. The glow of the streetlights flashes wickedly off the blade of the knife in his hand as he rapidly slashes it back and forth in a scythe-like pattern.

Black has his high-powered police flashlight in his weak hand. He flashes the



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beam in Trott's eye to distract him. The technique works. He now has the suicidal/ homicidal suspect's full attention.

And Trott lunges at Black, slashing with the knife.

Black has a swimmer's physique. He's built for speed. He dances back as the razor-sharp steel comes within arm's length. Black observes that Mike Harris has thrust his own Colt .45 auto back in the holster and spun the PR-24 baton out of the ring on his belt. Trott's back is quartered toward this officer, and Black yells, "Take him out! Hit him with the baton!"

Harris has a lot of confidence with that baton. His records show that he qualified to a high level with it, and he has seen and felt the enormous impact it can generate. Coming in now from the right flank, the powerfully-built Harris spins the baton with all his strength, intending to break Trott's knife arm.

The solid black baton strikes with a meaty thud. Harris feels the shockwave of the impact as the PR-24 stops dead on the suspect's arm, delivering its full force. The blow has struck the bunched forearm just above the radial nerve. The popular police textbook Tactical Edge: Tactics for High Risk Patrol states that a PR-24 blow at this point should cause the recipient of the strike to drop whatever he is holding.

Unfortunately, John Trott has not read Tactical Edge.

nd, instead of dropping the knife, he A spins to his right and comes at Harris, the knife flashing almost faster than the eye can follow.

Black sees the slash, sees the knife blade seem to disappear as it crosses Harris' front, belly-high, and he believes his partner has been slashed. Harris is now backpedalling desperately as the bigger man rushes after him, the knife blade still rapidly sweeping back and forth, going for the officer's guts. Harris' Thom McAn boots are slipping on the light skiff of snow that coats the ground, and he knows that in a second he is going to die. He sees the maniacal rictus of killing rage on Trott's face as the distance closes.

The flashlight in his left hand and the Combat Commander in his right, Black remembers a technique he learned at one of the training schools and thrusts both hands forward until thumb touches thumb, and hits the button for the light. The focused beam is directed straight into Trott's eyes, distracting him. He misses the slash that was intended to disembowel Harris, turns and looks hatefully at Black for an instant, and then lunges one final time.

The options have run out. Bill Black fires.

He is only 10 feet from Black as the loud report blasts from the muzzle of the .45, but Officer Harris is focused so intently on the man trying to murder him that he hears only a pop. He sees Trott instantly fall to the ground.

Black's shot has flown true. The .45 Sil-

vertip has entered the big man's right chest, in the pectoral area. The bullet rips across the liver, punches through the heart and tears through the spleen as it pierces the body right to left. It finishes, spent, on the far side of the left rib cage. The bullet has not deformed or mushroomed at all. It peeks out from a slit wound of exit in the skin of the left side.

The attacker has collapsed immediately, an instant one-shot stop. The cops are on him in a heartbeat, pulling the knife away and rapidly searching him for other weapons. They begin cardiopul-monary resuscitation. In moments, the paramedics are on the scene.

Their efforts, however, will be fruitless. John Trott, age 38, will be pronounced dead at the hospital.

Now, on the dark street where the knife-man's blood is mixing with the light dusting of snow, Officer Mike Harris reaches down to check himself. The blade has touched his jacket, but the first sweep missed his body. The last and more powerful, the slash that would probably have eviscerated him, was shortstopped by his brother officer.

Harris hears Corporal Black say, "I'm sorry, Mike, he was gonna kill you." And Harris answers sadly, "I know it. I know it."

he death of John Trott at the hands of Bill Black was ruled Justifiable Homicide. Objective analysis of the situation shows that extraordinary restraint had been used by the police. Many hard-line gun experts would have recommended shooting Trott with high-powered rifles as soon as he came outside the house and fired the shotgun. The officers held their fire in that instance.

Similarly, the first knife thrust at the officers more than warranted a deadly force response. Instead, multiple officers including the particularly valiant Mike Harris and Bill Black risked their own lives, hoping against hope that they would not have to take this man's life.

Black, in my opinion, fired only when it had become apparent that nothing less than lethal force was going to stop John Trott's rampage toward murder/suicide without an officer being cut to ribbons.

Not all my counterparts felt this way. Mr. Leonard Territo, formerly undersheriff of Leon County, Florida, testified in deposition for the plaintiffs in the inevitable lawsuit against Black and Littleton PD that the cops should have used chemical Mace, dogs, an electronic stun gun, or a capture net.

Kevin Parsons of Appleton, Wisconsin said this under oath for the plaintiffs: "... My general opinion is that the shooting was not a reasonable shooting given the overall circumstances at the time of the shooting . . . the knife, which was the principal weapon involved in this incident at the time of the shooting, did not, given (the) circumstances, justify the use of deadly force."



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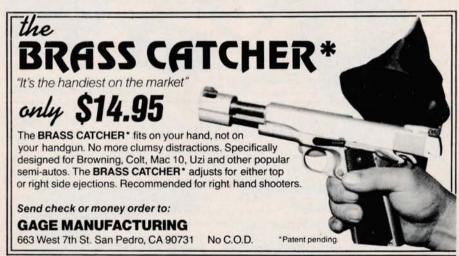
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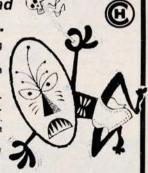
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I strongly disagreed with Territo and Parsons, both at the time of my own sworn deposition for the defense, and to-day. A 2½" blade knife most certainly is a deadly weapon, despite Dr. Parsons opinion.

Billy the Kid murdered his first victim with the one-inch stub of a broken pocketknife. In one 10-year period in Houston, two officers were murdered with blades shorter than the one Trott wielded against Black, Harris, and the other officers.

Dogs? Stun guns? Mace? Capture nets? Any police department that has used "incapacitating" aerosol sprays can tell you of incidents where it failed to affect anyone but the cops. Black had experienced one himself in the past.

Dogs have no place in barricade hostage scenes (which this was, until Trott altered the scenario seconds before the final confrontation).

Capture nets work effectively only on "Mexican Standoff" suspects who are standing immobile and challenging the cops to come in on them; Trott was exceedingly and aggressively mobile, moving far too fast for most cops to close with him.

Most stun guns now in use require three to five seconds of uninterrupted contact, during which time Trott could have stabbed whoever was applying it 10 or more times. Even the remote wire barbs of the Taser unit can't be applied safely: an LAPD authority advised me that cops have been stabbed or slashed in Los Angeles trying to Taser knife wielders.

Why did a powerful PR-24 baton blow, judiciously applied, fail to disarm the suspect? Knowing that he was taking the initiative to at last carry out his long-awaited battle to the death with police, Trott must have been roaring with adrenaline surge. This response triggers the release of norepenephrine, "the body's own painkiller." In addition, toxicology screen subsequent to autopsy showed Trott's blood alcohol content to be .347%, a level that would render most people unconscious but can be tolerated by a regular heavy drinker. They don't call it "feeling no pain" for nothing. Trott, a big man, had absorbed an enormous quantity of booze yet was able to move with amazing quickness and dexterity.

In deposition for the defense, I and Lt. Jim Fitzpatrick of Denver Police SWAT both testified that the use of deadly force in this case had been judicious and appropriate. Art Sapp of Colorado Springs PD, a member of the PR-24 International Training Staff, had been prepared to testify that no matter how high one's level of skill with the baton, the suspect's ability to withstand the first blow put in doubt any police ability to immediately neutralize him with further strikes, and left deadly force as the only reasonable alternative that suspect Trott had left to Black and the other officers he was trying to rapidly disembowel with his knife.

Bill Black was routinely debriefed by

Roger Solomon, the famous police psychologist from Colorado Springs, who helped him come to terms with having had to kill a man. The lawsuit was settled prior to trail (against Black's wishes, and for that matter, against mine; I am convinced Black would have won hands down)

Today, Bill Black still serves the City of Littleton as a street cop, still teaches weaponry and judicious use of deadly force to other lawmen, and still straps on a cocked and locked Colt .45 each night for work.

More committed than ever to the profession of protecting the innocent, he remains prepared to use as a last resort the weapon that carried him and Mike Harris through that terrible night four years ago.

The author wishes to thank the officers mentioned in this article and the many other members of the Littleton Police Department with whom he viewed the scene, performed re-enactments, and otherwise researched this case.

IPSC NATIONALS

Continued from page 56

women in the match who would outweigh some of the men, little Debby at 5'4" controls the recoil well. I overheard one shooter comment, after seeing her run an assault course, "Damn, she's good. She shoots like a man."

But not all of the ladies like being compared to the men. Fourth place lady Shirley Hamilton, shooting a Springfield Armory Wilson Accu-Comp in .45 ACP, was incensed when a Range Officer told her that her score was "pretty good . . . for a woman.'

"I didn't ask you how my score was for a woman," Shirley huffed, "I asked how my score compared as a B class shooter."

Debby became involved with IPSC the old fashioned way-her husband. Hubby Russell (8th place in the match and Top Cop) is a police sergeant and began inviting his wife to tag along when he practiced shooting. She tried handgunning and actually beat Russell in a few informal fun shoots. When he remarked that Debby seemed to have a natural talent for shooting, she began handgunning in earnest, first in PPC and later in IPSC.

She jokes that folks today call the husband and wife IPSC team the "Modern Day James Gang." Actually, she said, husband Russell is distantly related to the notorious James Brothers outlaws of the Old West.

Her advice to aspiring IPSC lady shooters is to forget the stereotype. "Culture says a woman has to keep the kids and do the laundry. Don't be afraid of making a fool of yourself, get out there and start shooting!" advises the champion.

'Most women are embarrassed in front of a crowd. Well, the only real embarrass-

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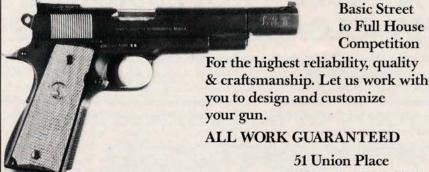
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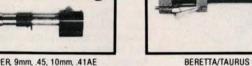
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ment is within themselves. You have to have dedication and pride, then it's easy," she counseled.

Debby is a firm believer in self-confidence, preferring that to esoteric mindgames of competition psychology. "I sometimes think that if you get too involved with the psychological aspect, you can just psyche yourself out.

"The only real mental preparation is believing in yourself, that you can achieve your personal best," Debby observed.

Her competition at the match was stiff. Canadian Ladies Champion and former Ladies World Champion Kerry Lathwell was there and so was Bianchi Cup Ladies Champion Christie Rogers. The sexy favorite of the gallery, Robertta Geer, dazzled the guys with her hot-pink Ernie Hill Speed Leather jacket and tight jeans while giving her fellow lady competitors something to think about too—tough competition.

Debby bested the best, and became the first back-to-back, two-time IPSC Ladies Champion in the long and distinguished history of IPSC in America.

"Even if I'd come in down the ladder, I'd still be happy because I shot to my personal best at this match," Debby said. Words of a true champion.

The wildcat 10mm Auto cartridge called the *Centimeter* was my choice for the IPSC Nationals. This efficient, trimmed-down version of the hot Norma 10mm shoots a 150 grain Sierra JHP at 1200 fps for a power factor of 180.

The ballistics are equivalent to the heavy bullet loads of the .38 Super— 158 grainers at 1150 fps. Both reduce muzzle flip and gun torque dramatically more than the standard .45 load of a 200 grain semi-wadcutter at 900 fps.

The Centimeter has less *felt recoil* than the Super. The recoil, of course, is very modest in both cartridges so the difference is not all that significant. But as Rob Leatham says about a tenth of second on every stage, the smallest advantage can spell the margin of victory.

Furthermore, the Super attains its ballistics only with the hottest of loads. It is no secret that the Super requires +P brass, fully supported chambers and careful load development. Even at that, primers are often flattened and firing pin hits are frequently cratered with these balls-to-the-wall Super loads.

Not so the Centimeter. The cartridge case is different, the bore diameter is different, the entire ballistics are different. The bottom line is that the Centimeter achieves the same performance of the Super but without any hint of pressure signs. It is safe, safe, safe.

One shooter at the IPSC Nationals can attest to the Super's border-line status. He was shooting a hopscotch stage where the competitor ran from box to box to box on an unusually silly course when his Super went *ka-boom* instead of bang. The

gun blew apart in his hands, sending vicious splinters deep into his flesh from what had been the grip panels. I didn't find the shooter to ask him the cause, but the round was definitely a .38 Super, according to a match official. I wish I could have tracked him down to see if Super Face had struck again.

You don't have to sweat a gun blowing up with Centimeter. In fact, my standard load of 6.65 grains of WW231 under a 150 gr. Sierra is not a hot load. I've poured in 7.0 grains of WW231 with still no signs of pressure problems. Good round, the Centimeter, and one I think will soon be widely popular in IPSC.

The pistolsmith whose name could well be synonymous with Centimeter is the talented gun tinkerer who specializes in the wildcat conversion of Government Model pistols. Paul Liebenberg, to my knowledge, remains the only master pistolsmith with significant experience in modifying guns to accept the remarkable "10mm Short."

I gave Paul my wobbly old Colt frame which Bill Wilson had improved with checkering and a mag funnel. Jim Boland had fitted the frame with customized thumb safeties and thumb guards. I bought this gun used in 1981 from an old college chum at Baylor University. Brad Butler had, in turn, bought the gun second-hand from Chip McCormick.

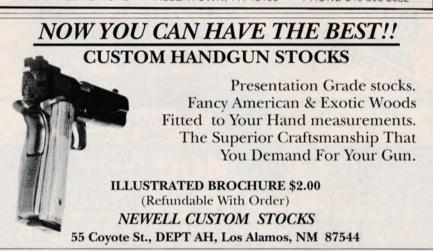
The story of this gun is interesting, almost a living-steel history of IPSC gun developments. I shot it as a five-inch gun for awhile, before the first compensator came along in 1982, and then Mike Plaxco installed one of his remarkable Plaxco Compensator Systems. Plaxco pioneered the "expansion chamber" compensator in 1982 when he won the national championship using a twin port comp of a design similar to one he first saw in South Africa in 1981. I used this old gun to take 13th place in the 1985 Canadian IPSC Nationals.

The rickety old frame is cracked in two places, above the slide stop hole and where the dust cover meets the frame-proper. I've put somewhere between 50,000 and 80,000 rounds through it in the six years when it was a .45 before it turned into a 10mm. I have no idea how many rounds Brad fired in the Old Girl, and who knows how many shots Chip fired through her. I think it's safe to say it has over 200,000 rounds through it.

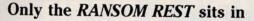
Yes, it's cracked. But it's still perfectly functional because those cracks, as savvy Guv'mint Mahdel shooters know, are quite common and in non-stress areas. (Makes me wonder about those "Wondernine" Berettas of the Army's that part company with their slides after less than 6.000 rounds in some cases.)

This gun is really something, and to say that it positively oozes with sentimental value for me is an understatement. That .45, when it was a five-inch before Plaxco got his mitts on it, rode behind my hip in Johannesburg when I lived in South Af-









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rica. That gun saved me a world of trouble one dark night at about 2 a.m. when two rather seedy characters decided to leap out of the bushes at me. They never got closer than five yards. Even in the dead of night's darkness, the black hole of a .45 bore was visible like a full moon. On the command, "Freeze!" the muggers beat feet and the confrontation never came. Remember, often the mere presence of a gun in resolute hands can deter crime before it even starts.

But I digress. This marvelous old .45 went to Paul to become a Centimeter. Paul installed a Colt 9mm slide and opened the breech face to accept the case head of the 10mm Auto. He replaced the frame's ejector and tuned the slide's extractor. He fitted a Bar-Sto Centimeter barrel and attached his highly efficient compensator.

Paul's compensator is a proven expansion chamber design with a thick muzzle constriction orifice that retains the hot powder gases inside the comp far more effectively than a thin faceplate on the comp. The bottom of the expansion chamber is fitted with a carefully design scoop that channels the gases upwards through the large single port.

I've shot an awful lot of comp guns from all the big names, many of the lesser knowns and a few of the unknowns and I've found only one that remotely rivals the amazing Liebenberg design. That is Jim Boland's "Double D" compensator, which virtually duplicates the efficiency of Paul's design. You can reach Paul at Pistol Dynamics, 4442 York Blvd., Dept AH, Unit 7, Los Angeles, CA, 90041.

One crucial aspect of the Centimeter is overall cartridge length. I won't dwell on this too much, because it only interests those who own one, but suffice it to say that the stubby 150 grain Sierra bullets need to be seated for an overall length of between 1.125" and 1.130" to function reliably.

My Centimeter's accuracy is, frankly, shocking. Without fussing with supercareful reloading to find the ultimate accuracy load, I routinely get half-inch clover leaves at 25 yards. That's a three shot group. Stretch it to five shot groups and the one ragged hole expands to between ¾ and ¾ of an inch. I cannot match that accuracy in any of my tuned .45s with the most carefully controlled handloads.

But that's not an overriding concern in an IPSC pistol where the ranges are close, usually, and the A-zone measures a whopping six-inches wide by 18-inches tall. That's a big X-ring and it doesn't take a tack-driver to shoot perfect scores from 50 yards.

However, there are many shooters, including the Incredible Rob Leatham, who insist that accuracy is very important in an IPSC gun. The theory is that one must have the best equipment one can get. If that's true, the Centimeter is it.

The course of fire for the 1988 IPSC National Championship comprised nine stages of which two were "standard exercises," two were "speed shoots" and five were "field courses." For those who came in late, a standard exercise is a series of drills—draw and fire two shots at a 25 yard target in three seconds, for instance—with a specific number of rounds shot in a specified manner in a limited time. The purpose is to test basic practical shooting skills. The procedure is rigidly dictated and the competitor is not allowed to improvise freestyle shooting methods.

Speed shoots and field courses are completely freestyle with the competitor allowed to "solve the problem" in any safe manner that is within the loose guidelines of the stage. A speed shoot, basicially, refers to any stage in which there is no movement on the part of the competitor. Just stand there like a man and squirt those targets as fast as you can.

A field course refers to a stage in which the competitor moves. This can vary from clambering over a wall to crawling through a tunnel to crashing through a door to just about any obstacle or barricade the devious match director can dream up. Commonly called "assault course," the field course is both a test of physical agility and coordination as well as shooting skill.

The three types of stages in the National Championship, and any other IPSC match for that matter, all seek to simulate situations in which the handgun is employed for self-defense. Admittedly, it is sometimes stretching the imagination to fantasize a scenario for standard exercises, but field courses and speed shoots present scenarios of gunfights, often taken from real shoot-outs.

The classic "Cirillo Drill" is an example of a real gunfight simulated in an IPSC match. Jim Cirillo, NYPD, once blew away three armed robbers during a stake-out and the IPSC stage bearing Jim's name re-enacts this fast and furious gun battle.

In the 1988 Championship, competitors duelled it out with bad guys in a variety of simulated self-defense scenarios. (It's vital to note that IPSC never uses scenarios that postulate the offensive use of a handgun; all simulations put the shooter in a defensive posture, as if he is being attacked or at the scene when other innocents are set upon.)

For instance, one stage began with the competitor lying in bed with his pistol in a drawer of a bedside table. On the start signal, the shooter leaped out of bed and killed the home invaders outside his bedroom window and down the hall, out his bedroom door.

But if we're to think that this stage represents practical shooting, then we must all go out and buy a pocketful of magnets.

The shooter was not allowed to use any of his magazine pouches—with good reason, no one goes to bed with a holster rig around his waist. The gun and any spare



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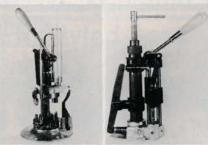
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magazines had to be deposited in the drawer and carried through the stage in any manner except in mag pouches.

Everyone clinched the one spare mag necessary for the number of targets in his teeth. Everyone except gamey Jerry Barnhart who stuffed his left pants pocket full of magnets and then stuck his spare mag to his leg! Clever, I must say.

An interesting field course pretended that the competitor was seated in a restaurant with a dinning companion when the restaurant, suddenly, is robbed. The shooter began seated at a table reading a menu with his buddy— a large stuffed dummy—seated next to him. On the start signal, the competitor took out three hostile targets and then physically picked up his companion and carried him/her/it to safety while shooting another armed robber during the 20 yard sprint to safety.

From there things went further downhill as the competitor discovered there were accomplices outside the restaurant, so after leaving his friend behind cover in safety, the shooter then barged through the restaurant's front door and killed more robbers.

Oh no! The big band of armed crooks were also robbing the business nextdoor! Quickly, the competitor ran to another door which, when he slammed it open, activated two moving targets that swung back and forth behind several innocent bystanders. Being careful not to shoot any of the hostages, the competitor killed the attackers and then ran on to take out the getaway men stationed nearby. Whew, quite a robbery, that one! Eleven bad guys in all!

Another good stage was one reminiscent of the Supermarket Checkout course from the 1986 World Shoot in which the shooter faced an array of five hostile Pepper Poppers and two non-combatant hostage Poppers. The range was close, eight to 10 yards, and the scenario was valid.

The only thing that made this a good stage instead of an excellent stage was the requirement that the shooter had to go prone and shoot a stop plate after blowing away the Pepper Poppers. I suppose this means that if you're attacked in the Safeway you must fall down and shoot a ketchup bottle on Aisle 7 after you kill the robbers.

Two stages required the shooter to retrieve his gun from under a napkin on a table. When Tom Campbell fumbled his draw from his holster on a speed shoot later on, he quipped, "I guess I've forgotten how to draw a gun from a holster. Gimme a napkin, and I'll show you fast draw!"

It's important to remember that IPSC is based on practicing techniques, and experimenting with weapons, for the purpose of honing your skills of self-defense with a handgun. This is why the targets simulate people. This is why the scoring zones on the targets are anatomically correct to give maximum points for a killing shot. If you hit the target in the wrist, you



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get two points; if you shoot the target in the solar plexus, you get five points.

This is why practical shooting has major and minor differentiations in ammunition. A piece of paper can't tell a wimploaded .38 Special from a hot .45 hardball. But practical experience in the real world of gunfighting shows that a large caliber bullet is a more reliable man-stopper. That's why you get four points for shooting the target in the lungs with a major caliber and only three with a minor round.

And this is why course design is the heart of practical shooting. Realistic scenarios that simulate the defensive use of a handgun give life to IPSC shooting.

The use of hostage, or innocent bystander, targets has become epidemic. The idea, I suppose, is to make a given shot more difficult by covering the hostile target with an innocent. However, if you want difficult shots, it's much better to cut the target or superimpose hard cover.

The reason is that littering a course of fire with hostages teaches very poor tactics. If you're in crowded bar and an armed robber threatens the barkeep, don't shoot. If you do not have enough of a target to shoot safely without endangering an innocent, withhold fire. Take cover and wait until you get a chance to fire a killing shot clear of any bystanders.

Not so in today's matches. Kill em all and let god sort em out. This programs a person to think that an innocent bystander's life is worth a 10 point penalty and, what the hell, blaze away anyway even if the given shot is beyond the individual's marksmanship abilities. On that Supermarket Checkout stage, the undertaker would be swamped with business from housewives falling in droves, thanks to being "saved" from a few armed robbers by a well-intentioned practical shooter.

Let's keep the number of hostages and innocents to a minimum and use other means to compell accuracy. It's ludicrous to force a beginning practical shooter to take shots that he, in his own mind, knows good and well he would never attempt on the street.

So it comes as no surprise that the 1988 contest was not, in fact, an IPSC match at all. The International Practical Shooting Confederation has not given its sanction to a United States championship in five years, thanks to courses of fire with impractical stages.

Moreover, the movers and shakers of IPSC have singled out the courses of fire from the United States as representative of "bad examples" of course design. Oh, we have fun and all that, but mama don't got no practical shootin' no more.

Despite its problems, practical shooting is still the most vigorous handgunning sport out there and remains the fastest growing handgunning sport in America. The match, despite its flaws, was a substantial improvement over the 1987 contest. The problems, actually,

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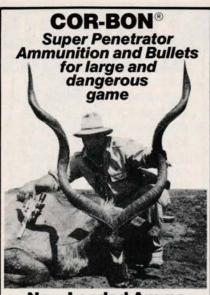
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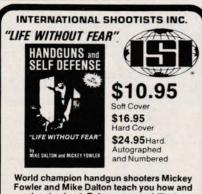
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were not significant enough to detract from an overall good show.

There's no question that shooting lifesize human silhouettes, no matter the troubles with stop plates and hostages and whatnot, sure beats the hell outta leisurely plinking off 200 meter rams while lying down twisted like a pretzel— if you wish to hone your self-defense skills. Speed and accuracy are still the prerequisites of IPSC, and those two ingredients spell victory in a gunfight.

It's obvious that the sport is thriving. This year drew the most competitors in history, 414 shooters. At the grassroots level, thousands of shooters, men and an increasing number of women, are discovering the most dynamic handgunning game in town. No other shooting sport combines athletics and shooting skill, with the lone exception of the Biathlon—skiing cross-country and then shooting a rimfire rifle. Even at that, it's a winter sport and not for handgunners.

Furthermore, the organizers are struggling with tremendous growth and trying to accommodate as many shooters as possible, both at the National Championship and at the area, state and local level. It has become a bean-counter's nightmare to keep up with the spiralling number of Classification Scores from across the nation. The Office of the Regional Director is doing an outstanding job of keeping pace.

Growing pains and technical problems are not unique to IPSC. The silhouette game run by IHSMA is a seething pot of discontent. Shucks, they even ban guns that are too expensive— imagine that!

Even the sedate game of bullseye shooting has its share of problems and that game's been around since Grog crawled off his pet dinosaur. If the clearcut, business-like format of shooting tiny holes in black bullseyes causes various complaints, no wonder the innovative, progressive sport of IPSC has its share of troubles.

So keep your perspective. Hobby shooting is inherently controversial. In fact, you might say that any recreational sport attracts fervent followers and anyone who loves a pastime tends to get emotionally absorbed in the details. A friend of mine races Hobbie Cat sailboats and he says IPSC squabbling ain't nuthin' compared to the protests at a regatta!

All and all, the 1988 IPSC National Championship was a success. Yeah, there are problems and they're being addressed. We need to remember the foundation of self-defense in our course design, and if we do that everything else falls right into line.



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RECOIL

Continued from page 50

enjoyment stage yet, but at least to the semi-relaxed stage.

Recoil is a result of the law of physics which says that for every action there is an equal and opposite reaction. Until we discover the gunsmith who figured out how to supply Dirty Harry with a recoilless .44 Magnum, we will have to learn how to conquer recoil.

When a gun is fired, violent things begin to happen behind the barrel. Many handguns are capable of firing loads that would have been classified as heavy rifle loads not too many years ago. The metallurgy of handguns has advanced to the point that guns can handle increased pressures. Although the structure of the hand is a miracle of design, it was not configured to handle such punishment as is delivered by the heavy recoiling handguns. But there are many things that a shooter can do to minimize both recoil and *felt* recoil.

The level of recoil will depend mainly upon two things: the weight of the handgun and the load that is fired. The heavier the handgun and, conversely, the lighter the load, the less the recoil. More important than the mathematical number that is measured in foot-pounds and assigned to each gun/load combination, at least to most shooters, is what I call *felt recoil*. This is the amount of recoil perceived by the shooter each time the gun is fired. It depends upon the weight of handgun and the load plus other factors such as grip shape and texture, grip angle, and even the mind-set of the shooter.

Noise has nothing to do with recoil, or does it? It seems to me that guns kick harder when I do not wear ear protection. They don't of course, but many shooters develop a beautiful flinch, not because of the recoil they are going to feel in the hand, but the pain they are going to experience in the ears. It is extremely foolish to do any amount of shooting without wearing proper ear protection. Ear plugs or ear muffs not only are extremely important to prevent the loss of hearing, but also they afford better shooting capabilities. I wish I had realized this when I started shooting in the late Fifties. No one wore ear protection in my crowd, and we all pay for it now with a loss of hearing.

Mind-set also has a lot to do with felt recoil. If someone tells a shooter, "Here try it, it's not bad at all," the mind will be set for enjoyment. If, however, just the opposite happens, and the shooter is conditioned to believe that the recoil will be awful, that is probably exactly what will be felt.

I can normally block out the pain associated with shooting long strings of very heavy handloads such as 300 grain .44's at 1400 fps and 340 grain .454's at 1800 fps. These loads hurt, be very sure of that.





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And I am not one who enjoys pain of any kind. But I have learned to block out the recoil when I am testing loads. If I drop the hammer on an empty while I am having pictures taken or while I am chronographing, I will usually flinch simply because I am totally relaxed and concentrating on the picture or clock reading rather than the shooting.

The opposite is true when I am shooting for accuracy or in a silhouette match. Slip in an empty on me, watch the hammer drop and the gun will not move. I have learned to set my mind and concentrate on the shooting, thus blocking out the recoil to a great extent. This comes with a lot of practice.

When I work with new shooters or one who is having problems, I always slip in an empty from time to time to show them the importance of concentration. If a silhouette shooter is consistently hitting low, it is probably because he is flinching as the hammer is dropped. Slipping in an empty without the shooter's knowledge will usually confirm this.

I do have to pay the price occasionally. Right now, the wrist on my shooting hand is sore from shooting heavy loads. Since it is impossible to learn about a gun or bullet or load by shooting a cylinder full, hundreds, often even thousands of rounds, must be fired in testing sessions. At times this catches up with me physically and it becomes necessary to back off and work with the lighter recoiling guns and loads for awhile. In order not to lose any valuable shooting time, I try to arrange my testing sessions so that I have some of the lighter loads to work with while my wrist heals. So for the next few weeks, I will be concentrating on the .32 Magnum, .32-20, and the .223.

This would be a good spot to categorize the various cartridges for revolvers and semi-automatics. This is not a rigid classification and everyone should feel free to classify any gun/load combination to suit themselves.

LIGHT RECOIL: .22, .22 Magnum, .25 ACP, .32 ACP, .30 Carbine, .32 Magnum, .32-20, .380, .38 Special (except in lightweight snubnose revolvers and derringers), possibly 9mm, and .38 Super. Even though light in recoil, some of these loads are the most painful to the ears.

MEDIUM RECOIL: 9mm, .38 Super, .38 Special + P and Keith load, .357 Magnum, .44 Special, .45 Colt, .45 ACP, .45 Auto-Rim, .357 Super-Mag.

HEAVY RECOIL: .44 Special Keith load, .45 Colt full house, .41 Magnum, .44 Magnum, .44 SuperMag, .454 Casull, .475 Linebaugh, .500 Linebaugh. These all require much concentration when fired, with the last three being possible candidates for the VERY HEAVY category.

The .375 SuperMag is somewhere in between the Medium and Heavy recoilers, and I reserve judgement on the 10mm and .45 Win Mag until I have had some shooting experience with them.

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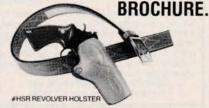


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I get more than a little perturbed by writers who tell their readers that heavy recoiling handguns are "pleasant to shoot." They are doing the reader and the manufacturer a real disservice. Heavy recoiling handguns are not pleasant to shoot. Exciting? Yes! Exhilarating? Yes! Maybe, even fun! Pleasant? No!

Most .44 Magnums, and the .454 Casull, .475 and .500 Linebaughs, all provide enough recoil to put them way above the "pleasant" stage.

A welcome trend in recent years is that of adding more weight to .44 Magnums. In 1956, .44 Magnums weighed in at the three pound level—now the Super Redhawk and Dan Wesson .44 Magnum are four pounds. This makes for heavier packing, but it certainly moves them closer to the elusive "pleasant to shoot" category.

Shooters have a viable choice in that they can now pick easy packin' .44 Magnums in the three pound weight range, or easier-to-shoot .44 Magnums in the four pound, and heavier weight range.

The .41 Magnum has gained a number of followers because it is a true magnum but has about 25% less recoil than the .44. Now that the heavy Dan Wesson and Ruger Redhawk .44 Magnums have been chambered for the .41 Magnum, the smaller magnum should become even more popular. Easier to handle and still delivers plenty of punch.

At the same time that magnum handguns have become heavier, many factory loads have become "softer." Thirty years ago, the only choice for the .44 Magnum was a 240 grain bullet at 1500 fps. Now we have 240's available at various velocities, plus the lighter, thus softer recoiling, 180, 200, and 220 grain bullet loads. There is no law that says full power must always be used! The reloader especially can tailor the load for any recoil level desired and four pound .44 Magnum revolvers really are pleasant to shoot with 250 gr./950 fps loads.

While .44 Magnums have become heavier, the trend in .357 Magnums seems to be lighter sixguns. When the heavy frame .357 Smith & Wesson was introduced in 1935, it was looked upon as the ultimate in power and recoil. The first .357 Magnum was basically a customized and rechambered .44 Special. Even Elmer Keith reported in 1935 that the .357 Smith & Wesson was very heavy and hard to hold offhand. Now many .357 Magnums are both smaller and lighter; shooters of .357's must be getting tougher.

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P.O. Box 627, Dept - O • Norcross, GA 30091 • (404) 446-2429 is the handgun stock. Unfortunately for most shooters, factory stocks are made to a price level and also to fit the "average" shooter. As a result, most factory stocks hardly fit anyone and actually provide a great deal of much appreciated business to the custom grip makers. Some notable exceptions, at least to this shooter, are the large frame Dan Wesson smooth wood stocks and the Super Redhawk rubber stocks.

I can live with both of these, and the Dan Wesson smooth wood stock combined with the four pound weight of the DW .44 itself, make this .44 Magnum almost "pleasant" to shoot. On long strings of 300-500 rounds of heavy loads, my shooting hand does not feel fatigued, but I will start to feel the pounding of recoil in my wrist. No grip can eliminate this.

Early double action stocks were very small, and the felt recoil was high even when shooting .44 Specials, .45 Colts, and .45 ACPs in both Smith & Wesson and Colt revolvers. The stock did not come to the top of the frame, so the shooting hand was pounded by the top of the frame everytime the gun was fired.

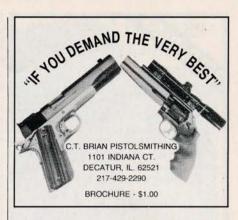
A major improvement was the S&W "Magna" stock which extended all the way to the top of the frame. This stock was standard on the .357 Magnum when it was introduced in the Thirties and was a definite step forward and handled the recoil level of the .357 and factory style loads in the .44 Special and .45 Colt adequately.

Elmer Keith preferred this stock on his .44 Magnums as well, and all of his Smith & Wesson .44 Magnums were equipped with ivory Magna-style stocks. I have tried to fire Smith & Wesson .44 Magnums with the Magna stock and I have to admit that the old boy was a lot tougher than I am. I cannot handle the recoil without a stock that fills in behind the trigger guard.

I recently had the opportunity to handle all of Elmer's .44 Magnums and found that each of them had a large steerhead or eagle carved in the right grip which allowed a natural palm swell. This would help to lessen felt recoil as the palm would absorb some of the recoil that the factory Magna stocks transferred to the web of the hand.

Sometime prior to the advent of the .44 Magnum, Smith & Wesson brought out their third design in double action stocks, the target stock. This filled in behind the trigger guard and made the big N-frame Smiths much easier to shoot. Lately, probably because of cost saving considerations, these full target stocks have become blockier, fill in less area behind the trigger guard, and have much sharper checkering.

It was my discovery of custom stocks that made the .44 Magnum manageable for me. I had purchased a pair of Herrett Trooper stocks for my .357 Smith & Wesson Highway Patrolman. These





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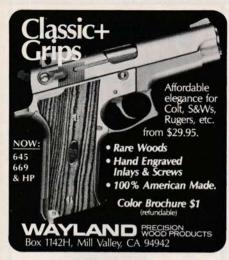
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stocks covered the front strap, most of the backstrap, and had fine checkering. The idea came to me that this might be the answer to help tame the recoil of the .44 Magnum, so I bought a Smith & Wesson .44, and voila, the extreme pain was gone!

My Ruger .44 was equipped with a pair of Herrett stocks that fill in behind the trigger guard and I suddenly had two .44 Magnums that I could shoot. Herrett's (P.O. Box 741, Dept AH, Twin Falls, ID 83301) is still in the business making the Trooper stock, plus the original Walter Roper design and the Jordan Trooper, all of which do a good job of lessening felt recoil on heavy-recoiling sixguns.

These days my requirements for stocks for the big frame Smiths are filled by the "Skeeter Skelton" style grip as provided by BearHug Grips (P.O. Box 9664, Dept. AH, Colorado Springs, CO 80909). Skeeter modified Walter Roper's old design to provide the slimmest possible stock that still filled in behind the trigger guard. At first I thought that this style of grip would allow my hand to be pounded in the web area as the backstrap is completely open. This has not been the case, and most of my DA sixguns are now fitted with BearHug stocks of various exotic woods of the Skeeter Skelton style.

In addition to the Skeeter Skelton style of grip, Deacon Deason of BearHug also offers stocks with finger grooves, thumbrests, open or closed backstraps using any type of wood from plain walnut through exotic Kingwood, Bloodwood, Rosewood, and Ebony. BearHug Grips are top quality, made to fit each individual hand, and they go a long way in taming recoil, plus they look real good.

Pachmayr rubber grips have been a real salvation for a number of shooters, especially hunters and silhouetters. Reasonably priced, they offer a solid feeling grip with just a little give to them, and are a regular item on all silhouette ranges. I prefer their non-slip quality for shooting silhouettes and also when carrying a gun in the hunting field in foul weather.

The Pachmayr Gripper is the only grip that allows me to handle the full house SSK .45-70 TC. If my hands are the least bit slippery, such as when wearing a worn leather glove, the big .45-70 will jump right out of my hands when factory wooden stocks are used.

The gripper also works well for me on the medium frame Smiths and Dan Wessons, and the SA grip for Ruger Super Blackhawk is almost mandatory for silhouetters. However, I have found that the checkering on the Pachmayr will chew up my hand when long strings of heavy loads are fired in the evaluating of guns or ammunition. So the smooth wood stocks are called into play when there is to be a long testing session. Pachmayr can be reached at 1875 S. Mountain Ave., Dept AH, Monrovia, CA 91016.

The classic Colt Single Action grip has been called "the grip that fits everyone." It does a good job, but is a little short for





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RICHARD HEINIE PISTOLSMITH 821 E. Adams, Havana, IL 62644 Member American Pistolsmiths Guild some shooters requiring that the little finger be curled under the butt. The single action grip does a very good job of handling recoil of the medium calibers as it allows the sixgun to just roll in the hand.

Bill Ruger used an exact copy of the standard single action grip on his first .44 Magnum. This was changed within a few years to the Super Blackhawk style grip to help minimize .44 Magnum recoil that the standard SA grip was maximizing for most shooters. I've learned to handle the original grip and actually prefer it over the Super Blackhawk style.

The Super Blackhawk .44 extended the grip and re-introduced the old Colt Dragoon style square back trigger guard as a means of stopping the knuckle dusting that many shooters were experiencing. It's popularity attests to its success.

Two relatively new SA grip designs that work very well are the Freedom Arms grip for the .454 and the Bisley grip on the newest lineup of Ruger Single Actions. Neither one is perfect, if there even is such a thing.

The Freedom Arms grip still allows my knuckle to be rapped, and the Bisley grip, rather the Bisley trigger, catches me on the tip of the trigger finger, but they do the best job of minimizing SA recoil for this shooter. The Bisley grip is being used for custom .475 and .500 revolvers as it does such a good job of lessening felt recoil.

Recently, I have worked with a relatively new firm, Blu Magnum Grips (Dept. AH, 2605 E. Willamette, Colorado Springs, CO 80909) in coming up with a SA grip for the Freedom Arms and Ruger single actions. Tedd Adamovich of Blu Magnum did all the work—I just gave him a few suggestions—and he came up with a compact grip that still fills in behind the trigger guard to stop knuckle dusting common to heavy recoiling SA's. These stocks will be offered in walnut and exotic woods and the work, like BearHug's, is also top drawer.

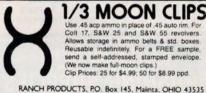
The classic SA stock can be improved upon simply by slimming them down. Both Colt and Ruger SA grips are made little at the top and big at the bottom which accentuates recoil. For both good looks and better shooting, I have equipped most of my SA's with custom stocks that are about one-third narrower at the bottom.

Another custom single action grip maker that I use is Charles Able (P.O. Box 1494, Dept. AH, Carlsbad, NM 88220) who offers old school craftsmanship in both ivory and fancy woods. There are a number of other custom gripmakers that are found in both articles and advertising in the pages of *American Handgunner*. The ones I have mentioned are the ones with which I have had extensive personal experience.

The early Thompson/Center Contender had a stock that was built for Continued on page 109











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Suspect enters Bill's Books & Magazines on 5th and Main and immediately proceeds to magazine rack where he picks up the last copy of GUNS Magazine.

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11:04 a.m.

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11:16 a.m.

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punishment. Shooting one of the early octagon barreled .44 Magnums with the saw handle grip was a real experience in pain. T/C made two major improvements by making the bull barrel standard, thus adding needed weight, and also by experimenting with the grip until they came up with the excellent finger groove design. The latest T/C design has a rubber cushioned backstrap to help reduce felt recoil. I would like to see them combine the finger groove design with the rubber cushioned backstrap, thereby giving the security of the finger grooves coupled with the felt recoil reducing quality of the rubber backstrap.

What about the so-called recoil reducers such as Mag-Na-Port and other muzzle brakes? Do they really work? Or is it simply a case of the mind making them work because of the extra money that has been spent to acquire them? To find out, I set up an experiment in photography and took pictures of .44 Magnums fired with and without Mag-Na-Porting.

Two .44 Magnum Model 29's, both with four-inch barrels, one with Mag-Na-Porting and one without, and also two Ruger Super Blackhawks, one 43/4 inch barreled specimen with Mag-Na-Porting and a 51/2 inch barreled version without, were fired and caught by the camera at the heighth of recoil. The pictures show that those sixguns that have been Mag-Na-Ported show less muzzle rise than those that have not. Does this mean less recoil?

The amount of barrel whip probably does not really prove anything about the amount of recoil as it depends upon barrel length and the strength of the shooter's grip. I know I have missed many a silhouette target simply because I relaxed my grip and when the gun was fired, the barrel lifted higher in recoil, resulting in a miss. The inherent recoil of the gun did not change, but the amount of backward movement of the barrel did.

As I studied the pictures, I shifted my attention from the fired gun and instead looked at my arm and how much it moved as the gun was fired. Again it appears that the Mag-Na-Ported sixguns give less apparent recoil as my arm moved less with them than with the non-ported ones. And even though the ported sixguns seem to have less recoil, and I also seem to perceive less felt recoil, recoil is still very heavy with full house loads and in no way can it be said that they become "pleasant" to shoot.

I have no way of measuring to see if the recoil is definitely reduced, but at least it feels like the recoil has been reduced, and this feeling of reducing felt recoil is probably what counts anyway. It seems that the heavier the recoil, the higher the percentage of reduction. Three hundred grain bullets in the short barreled, light weight .44 Magnums almost demand Mag-Na-Porting (Mag-Na-Port, Dept. AH, 41302 Executive Dr., Mt. Clemons, MI, 48045). Mental or physical? Or both?

Muzzle brakes on the heavy caliber single-shots definitely reduce recoil. With a proper muzzle brake, an XP-100 chambered for one of J.D. Jones' heavy wildcats becomes a real pussycat. Recoil can be brought down below the level of the medium handgun cartridges. I have fired XP's with a muzzle brake that just barely nudged backwards in the shooter's hand. Most of the heavy calibers in an XP would be unbearable without a muzzle brake.

A much neglected area of minimizing felt recoil is physical conditioning. Shooters can build up wrist and arm muscles by squeezing a rubber ball or even by doing wrist curls with a heavy sixgun. It takes strong arm muscles to even hold a four pound handgun out at arm's length, and strengthening of the wrist and arm muscles will help minimize the effect of recoil.

There is nothing sissy at all about wearing proper equipment. This includes elbow pads when shooting from Creedmore or off a bench, and definitely includes wearing leather gloves when shooting heavy loads. In addition to wearing a shooting glove, I also tape two layers of eighth-inch foam padding over the knuckle of the middle finger of my shooting hand, plus two layers of adhesive tape are wrapped around my trigger finger to avoid it being cut open by the top of the trigger guard. Boxers and football players use a lot of tape for protection so I feel that I am in good company.

Dick Casull, creator of the .454 that bears his name, always wears heavy leather gloves on both hands when he shoots his pet. Without the wrapped knuckle, a session of heavy loads for me leads to another session with the hand doctor and his magic knuckle-needle. No thanks!

My wish for all handgunners is that none would be intimidated by anyone into consistently shooting a handgun that gives more recoil than they want to handle. Handguns should be shooting tools not bragging tools.

If a heavy revolver chambered for the .357 Magnum is the top end of the recoil level that can be handled, then by all means shoot a .357 Magnum and learn to shoot it well. If a full-house .44 Magnum is too much, load it down and enjoy shooting. A 250 grain .44 or .45 cast bullet at 1000 fps is a viable defense load and has taken more deer over the past 80 years than I would want to count.

For some shooters, it may even mean dropping into the light category. Whatever the power level that you choose, shoot at that level enough to become really proficient. Recoil? Relax and enjoy it!



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INDUSTRY INSIDER

CAMERON HOPKINS

COLT SAYS A BIG NEW GUN IS COMING; S&W UNVEILS NEW CHOPPED MODEL 4516

Twenty nine different double-action pistols are soon to be joined by number 30. Colt Firearms will introduce a 9mm and .45 DA pistol at the NRA Show in St. Louis. (Those 29 different double-actions, by the way, don't include the many different models of one design. For instance, I'm only counting SIG once, not three times for the 220, 225 and 226.)

The new Colt DA is actually not new at all. The gun has existed in prototype form since at least 1972 when the gun shown here was photographed. (Sorry about the blurry picture. We got word of the new Colt pistol after this issue was already on press. Xerox copies of the 1972 prototype were all we could get at the last second.)

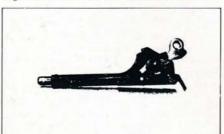
Colt's John Nassif, when asked to confirm the story about Colt's new DA pistol, said, "I will neither confirm nor deny that rumor." However, Colt's executive vice president of marketing, Bob Morrison, acknowledged that the new pistol would be announced at the NRA Show. Morrison would not reveal any details on the mechanics of the gun, so what follows is informed speculation.



The pistol accepts a double-column staggered magazine in .45 ACP with a capacity of, it appears, 10 rounds. The slide has a hammerdropper "safety" like the S&W auto. The frame resembles the Government Model in ergonomic shape, however, there is no grip safety.

The back strap of the pistol contains a single, integral unit containing the ham-

mer, mainspring, sear, disconnector and ejector. The barrel locks up with an integral bushing in the slide coupled with a corresponding surface on the end of the barrel. The barrel unlocks with the inclined plane system rather than the swinging link of the Government Model.



Disassembly is accomplished with a take-down latch just forward of the trigger guard like the SIG auto. The magazine release is in the conventional location.

Smith & Wesson confirms that it has been working on a "top secret" 10mm Auto for the FBI. S&W president Steve Melvin confirms in a letter to *Handgunner* reader Don Hess, "We are going to bring out a 10mm pistol and three mini-guns (.45, 9mm, 10mm)."

And thank you, Don, for forwarding a copy of Mr. Melvin's letter to me. This is the first official acknowledgement by S&W of its 10mm.

Further investigation has revealed that the FBI will adopt a "down-loaded version of the 10mm made by **Federal**," according to S&W's Sherry Collins. The FBI, according to informed sources, plans to adopt a 10mm sometime in 1990 or 1991. A call to Mike Bussard, marketing manager of Federal Cartridge, disclosed that the FBI is specifying a 180 grain bullet at 950 fps for its 10mm load.

(Sounds suspiciously like the ballistics of .45 ACP Silvertips, eh?)

If a new double-action Colt and a 10mm Smith aren't enough for one *Insider*, this might grab you—the long awaited.45 shorty from **Smith & Wesson** is here! The Model 4516 is the much heralded compact version of the Model 4506 about which I



have been hinting for the past year. This little belly gun weighs four ounces less than the full-size 4506 and measures an inch shorter. The barrel is 3½ inches long. The shortened grip frame takes a seven round magazine, one less than the 4506.

Testimony to the growth of practical shooting, both IPSC and NRA Action, comes in the new reloading booklet from **Accurate Arms**. The new brochure has a special section called *Notes on IPSC and NRA Action Shooting*. There is no section devoted to silhouette handloads.

A wide variety of both cast and jacketed bullets are included for the .38 Super with safe charges of Accurate Arms powders, mostly AA #7. However, there are no IPSC loads listed for the 9mm. "The 9mm was not designed as a magnum handgun cartridge, nor should it be forced into that role," the booklet cautions.

To obtain a free copy of the booklet, write Accurate Arms, Dept. AH, P.O. Box 167, McEwen, TN 37101.

What guns does the president of **Smith & Wesson** own and shoot? Steve Melvin says he owns only two handguns, both Smiths: a Model 422 with an Aimpoint and a Model 586 "US Customs Model" with a satin nickel finish.

If a 14-inch barrel isn't enough for you, try one of the new Super 16 barrels for the Contender from **Thompson-Center Arms**. The new 16-inch tubes fit the standard TC frame and are available in all popular TC calibers plus the new big bore chambering of .45-70. If you're looking for bone-crushing power, the .45 caliber, 500 grain slugs of this great buffalo killer of the frontier days is certainly a good way to wake up to big bores.

Here's an interesting tid-bit: bicyles kill more children every year in accidents than firearms. The Brady Bunch from Handgun Control Inc. would have you believe that thousands upon thousands of innocent children are killed every year by those evil, nasty guns. However, the NRA reports that less than 300 out of 92,000 accidental deaths per year are attributable to firearms. Bicycles, says the NRA, kill more kids than guns.

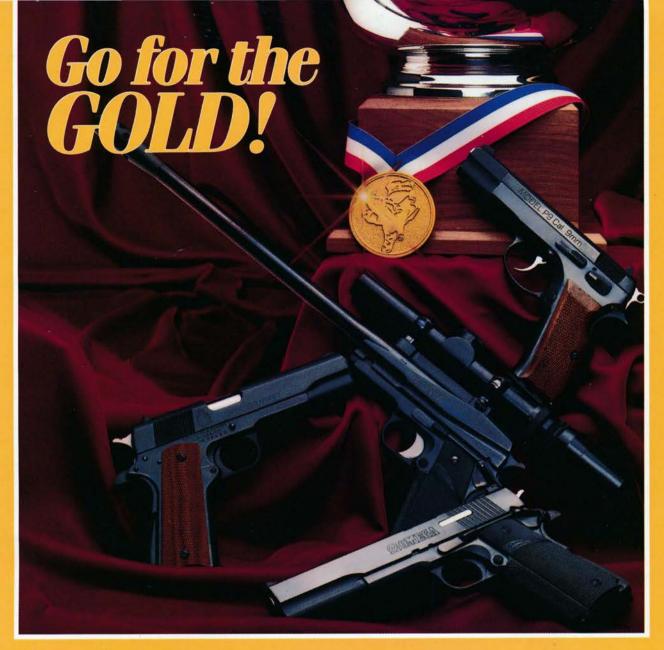
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