

FN's Dynamic Duo

THIS PISTOL AND CARBINE ARE READY FOR DUTY

The 1911 single-action pistol has been around since well, 1911. Yet it is only in the last 15 years or so, and particularly in the last five that we have seen a veritable explosion in its popularity and the number of manufacturers making and modifying and providing accessories for this previously “specialist only” pistol--putting this pistol in the hand of seemingly every serious/semi-serious pistol shooter. But it took almost 100 years to get to this point!

Another example is stainless steel and synthetic stocks. These have been available since the 1960s for hunting rifles, but they had been ignored in favor of traditional walnut and blued steel for 30 years or so until the majority of shooters figured out the advantages of these materials in bad weather situations.



FiveseveN PISTOL WITH MAXPEDITION JUMBO S TYPE VERSIPACK AND FIVE ROUNDS THAT OPERATE WITHIN THE RANGE OF THE 5.7 X 28, FROM L TO R, 22 WRF MAGNUM WITH 40-GR. HP, .17 HMR WITH 17-GR. VMAX BULLET, 5.7 X 28 WITH 40-GR. VMAX BULLET, .32 H&R MAGNUM WITH 85-GR. JHP, 158-GR. .38 SPECIAL STANDARD VELOCITY JHP, AND 9MM WINCHESTER SXT 127-GR. +P+.



Lets give some credit where credit is due. We aren't always THIS stodgy. For example the Glock pistol took off like a rocket after initial (and fraudulent) media reports provoked concerns about its polymer construction slowed its acceptance. After the truth came out, the rise to prominence was nearly meteoric and Glock now holds the majority share of the law enforcement market-- a remarkable and unparalleled achievement.

In doing my review of the FiveseveN pistol and the PS90 carbine, I wanted to keep this history in mind. As this duo is still relatively new to the civilian shooter (or privately purchased LE market) I felt that the guns should be viewed in terms of three factors, or portions of these factors, in order to determine shooter acceptability. These factors all directly affect the end user, the shooter. Are these guns--or parts of them--innovative, unconventional or odd? Why?

If the guns are innovative, they will be accepted in rather short order. Glock's design is innovative. The polymer frames, high reliability and user-friendly simplicity made them a market success. If guns are unconventional, there will be some acceptance issues. While an entire weapon may be innovative overall, parts of it may be unconventional. Glock's Safe-Action trigger system, was at the time of introduction, unconventional--there was no other manual safety on the weapon that had to

be engaged or disengaged for use. There wasn't even a de-cocker. While today this system is mostly viewed as innovative (and actually normal), there are still a number of police administrators that view Glocks as unsafe and unconventional and will not permit their issue or use. Finally, if a gun or parts of it are viewed as odd, then we have a serious acceptance problem. There are two examples that come to mind, both developed in the 1960s, of odd guns that never made it. The first was the Gyrojet pistol. This odd weapon fired rocket-powered cartridges in both pistol and rifle form. It was neither accurate nor particularly powerful. Its rocket projectiles could be stopped by the human hand at the end of the barrel without damage since they hadn't gained sufficient velocity. It took several feet of travel to gain appropriate speed. The second was the Dardick pistol, a very strange pistol that was a combination of revolver and semi-automatic pistol that fired a .38 caliber plastic cased “tround” cartridge that contained bullet and powder. Both guns looked toy-like and are now collector's items.

So with these parameters in mind let's look at a pair of new weapons systems, and the cartridge they fire. From Fabrique Nationale come the FiveseveN pistol and the PS90 carbine. First lets examine the PS90 carbine.

The PS90 is the civilian-legal version of the original P90, which was designed

as a “personal defense weapon” for specialized military personnel whose main duties do not revolve around the military rifle. These troops are normally issued a pistol as a personal defense weapon. For U.S. forces that pistol is the Beretta M-9. These soldiers include tank or artillery crews, pilots and air crewmen, and troops operating to the rear of forward areas. However, it has long been felt that the pistol, in the hands of the average soldier is not up to the task. I have to agree to a large extent.

If our military pistol shooters had trained up to a reasonable level in IPSC or IDPA-style shooting for example, I might feel differently. But such is not the case and military training with the pistol for non-spec ops personnel is very basic. Further, not everyone has the same abilities. What those in the research areas felt was needed to compensate for lack of proficiency with a pistol was a handy, shoulder-fired weapon of high magazine capacity and adequate power. The goal was to have a firearm that could be carried conveniently for extended periods of time in place of the pistol, and that would allow hits out to 100 yards or so. This new weapon design was not to be an assault (taking the initiative) weapon, but rather a defensive (holding the position or covering the retreat) weapon. Hmmm, does the M-1 Carbine of WWII fame come to mind here? Same problem, different time.

In fact, wasn't switching to an easier-shooting 9mm from the .45 supposed to solve most of these "problems"? Guess it didn't. However, one new wrinkle to the M-1 Carbine twist was that the weapon needed to penetrate the body armor worn by Soviet (Russian) or Chi-com/North Korean forces. Like the original M-1, the new PD weapon needed to be light-recoiling and easy to fire. Unlike the M-1, it was to be full-auto capable with a large magazine capacity and as a part of FN's design plan, totally ambidextrous in operation. What FN ended up with was, well, a very cool weapon, futuristic in appearance and totally unique, the P90. While the P90 is already in use by a number of agencies such as the Secret Service, and is also the signature weapon of the science fiction television show Stargate, it has not been adopted, at least by the U.S., in its intended military role.

The civilian-legal counterpart, the PS90, retains most of the characteristics of the original P90 plus all of the overwhelming "cool factor". According to the manual the PS90 is a blowback-operated bullpup carbine firing from a closed breach. It weighs 6.61 lbs. (which is really deceiving, since it seems much lighter, undoubtedly due to its small size), has a maximum width of 2.3 inches and an overall length of only 26.3 inches and has a fixed optical sight. It is truly am-

bidextrous in operation, with the disk-shaped safety capable of being operated by the trigger finger of either hand, pulling it toward you to fire if you are right-handed, and pushing it away from you if you are left handed.

Cartridges are fed through a translucent amber-colored polymer magazine that sits flush on top of the stock, but underneath the sighting module, parallel with the bore and chamber. Release the magazine by operating either of the two magazine releases on either side of the magazine at the chamber. Ejection is downward through the large ejection port, located aft of pistol grip portion of the weapon. No empty casings will hit your face, no matter

which way you hold the weapon while firing. The weapon is charged by grasping one of the ambidextrous cocking handles located on either side of the barrel assembly, and pulling directly backwards. The trigger, which has been complained about by some, is okay to me. I originally agreed with the opinions of the trigger, but I went back to the original concept that this is an emergency defen-

sive weapon, and that the trigger is essentially set up the same as the full-auto version, to allow for controlled fire bursts, not long-range sniping.

With that being said, there are only three things that differentiate it from the P90. The first is the civilian legal 16-inch barrel (which still puts the OAL about the same as the excellent M-16 Clinic Viper with its 7.25 inch barrel) and gives improved ballistic performance to the 5.7 x 28 cartridge over the much shorter P90 barrel. The second is that the PS90 fires in semi-automatic mode only. The third is that it is shipped with a single 30-round magazine that is marked as a 50-rounder.



15 YARD 6-SHOT GROUP FIRED BY AUTHOR WITH PS90 STANDING UNSUPPORTED.

The magazine spring is modified to allow for loading of only 30 rounds. Fifty-round magazines are available from Internet suppliers. The overall assembly is modular in format, and breaks down easily for cleaning. There is a single sling attachment slot in the toe of the buttstock. Up to this point, everything I have described falls under the classification of being innovative.

Now lets look at the PS90 in subjective detail. When I first got my sample of the PS90, I kind of shook my head. Ok, it appeared, like I said, cool, but there were a number of things that bothered me about it. First was the price. Innovation comes with a price. The retail price is \$1,500. I imagine that the price will come down somewhat as more of PS90's become available, but heck, I could have a really sweet AR for that kind of money, and the PS90 didn't even come with a sling (really, for \$1,500 can we get a sling shipped with it, please?).

Also, I was troubled at first by the fixed Optical Ring Sights sighting system. They are not adjustable; at least there is no adjustment method described in the manual or visible on the sight. There are only two mounting screws. Chalk that up as odd. I liked the small ring within the large ring for the reticle concept, but the field of view is very small, and under poor lighting the ghostly white (apparently a black ring is also available) reticle disappears until a parallel and perpendicular set of tritium bars that intersect

the center circle appear to enhance the sight picture. When I got home and tried the sights in a darkened room, I could see the tritium appear, but it is not what you would expect from tritium sighting. It is vaguely orange and not bright. That seemed unconventional, and borderline odd. It was not what I was used to. But, I thought again, the PS90 is derived directly from an emergency combat weapon and is supposed to be durable and require no maintenance, and should be as idiot-proof as possible.

Ok, I guess the sights work, so they moved up to the unconventional level as I figured that what I would really like on the PS90 was a good red dot sight of some sort. But after working with it some more during live fire, and making another discovery about the sighting system, I moved the Ring Sight all the way up to innovative. What was the discovery? Not mentioned in the manual is that the PS90 as well as the P90 have a set of AMBIDEXTROUS backup open iron sights built right into the barrel support and optical sight group assembly. I only discovered this after dropping (sorry FN) the PS90 onto the carpeted floor (unloaded) and checking the optical sight. Suddenly there they were, one set on either side of the optical sight. They were part of the construction, regulated on either side to the

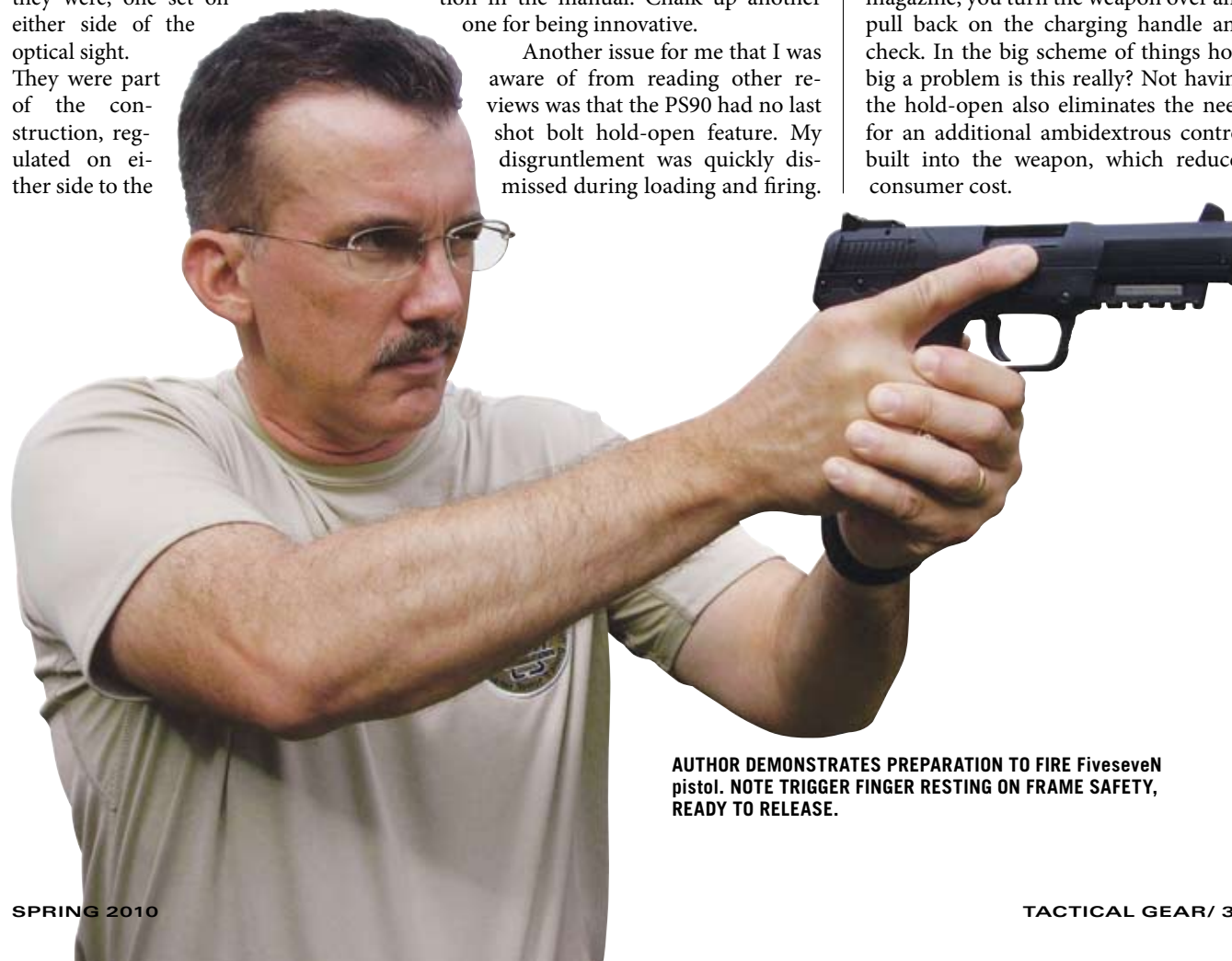


AUTHOR DEMONSTRATES COMFORTABLE AND SAFE SUPPORT HAND CRADLING GRIP WITH LEFT THUMB RESTING ON LEFT SIDE CHARGING HANDLE. THUMB STAYS OUT OF TRIGGER GUARD HOLE, PREVENTING A TIE UP WITH TRIGGER FINGER.

point of aim of the optical sight, in the same black coating that the rest of the assembly is covered in. If the Ring Sight is damaged in a mishap, you have the open sights to use in their place! I have never seen anything like this before! They work just as well for the right- or left-handed shooter! This really ought to get a mention in the manual. Chalk up another one for being innovative.

Another issue for me that I was aware of from reading other reviews was that the PS90 had no last shot bolt hold-open feature. My disgruntlement was quickly dismissed during loading and firing.

Once the weapon has been shot empty, and you get the empty trigger "click", you cannot easily see the chamber anyway with the magazine in place. You have to check through the bottom ejection port to see the chamber with the magazine in place. In order to check and clear if you don't want to remove the visibly empty magazine, you turn the weapon over and pull back on the charging handle and check. In the big scheme of things how big a problem is this really? Not having the hold-open also eliminates the need for an additional ambidextrous control built into the weapon, which reduces consumer cost.



AUTHOR DEMONSTRATES PREPARATION TO FIRE FiveSeven pistol. NOTE TRIGGER FINGER RESTING ON FRAME SAFETY, READY TO RELEASE.

WESTERVILLE POLICE SGT. AND COLUMBUS STATE INSTRUCTOR MIKE TUSSEY FIRING PS90 CARBINE

THE BULLET TEST TUBE

Ever since I shot my first gallon jug of water with a handgun round to see what kind of impact it (probably a .38 special round of some sort) had, I longed for an easy way to comparatively test defensive ammunition. While I knew that water jugs really didn't give a wealth of information about bullet characteristics when shot (beyond showing what high-velocity ammo would do in comparison to low-velocity ammo of the same caliber) it could be impressive. It did, and does serve to show the novice how damaging the impact of a bullet can be, and I used this method to help explain to my daughter why one must always be careful with firearms, as the result she saw on the water jug could happen to a person. However, the jug does not give good info on expansion characteristics, depth of penetration (unless a number of them are set one behind the other) or permanent wound cavity. I knew, back in those days, that there were other methods of testing including shooting rounds into modeling clay or into wet newspaper. Like the water jugs, neither had the qualities of human flesh, and they were somewhat less convenient to work with than empty milk jugs.

Later on came ballistic gelatin, a great improvement. With the proper setup and mixture, you can, according to experts, simulate the density of human muscle tissue. Ballistic gel will allow you to see the permanent and controversial temporary cavity. It also allows you to check bullet expansion and depth of penetration. Although one must remember that no human being or animal is a homogenized mass of exactly the same tissue material, and there are almost limitless variables at work anytime a living thing is shot. With that being said, substances like ballistic gel DO give a point of comparison, and can, most importantly, show us which defensive rounds, especially those chosen for law enforcement, have too much penetration for street use.

The downside to ballistic gelatin is that it is expensive, messy, time-consuming, requires proper cold storage, and calibration with a BB gun before it can be used. In other words, it is a real pain and requires a lot of dedication to work with. Once it has been shot up, it is not reusable.

This is not the case with the Bullet Test Tube by Ballistic Technologies. The Bullet Test Tube is an easy-to-use and reusable system of relatively low cost, and one

that I think might give a better comparison method than standard ballistic gelatin.

The tubes are initially a one-shot testing method. Measuring 8.5 inches in diameter, each system is contained in a cardboard tube can. The tube can be stored in any location, (ok, not inside a hot car for hours) as the sticky, waxy substance has no temperature requirements other than it works at its very best at 72 degrees, but no refrigeration is needed. In working with this, I wondered just how cold ballistic gel equated to warm human flesh, which I guess is a question for the scientific types to answer. The ends of the outer can are opened and the ballistic material comes out sealed in silver foil-covered cardboard.

On one end is a small yellow target. Online instructions say that for the most accurate results the center of the target should be shot, which means that the tube is good for one shot before re-melting it, straining it, and pouring it into the empty molds that are also available along with the tubes online at www.thebullettesttube.com. Ballistic gel, if shot carefully, can take multiple hits, which gives it somewhat of an advantage, but this doesn't tell the full story. The Bullet Test Tube material is translucent, and again, unlike ballistic gel, you can't see the bullets activity from the outside. The tube must be sectioned in half with a utility knife and the Ballistic Tube splitter tool (which is a tough, sharp piece of wire with two handles at the end, like a cheese cutter for large blocks of cheese). But before doing this, you may want to measure the permanent cavity wound volume. This is done by pouring water into the tube and measuring the returned amount to calculate volume, something which cannot be done well with ballistic gelatin. While I didn't do this in my quick product test, it surely would be a serious measurement for the serious ballistic tester.

After you check wound volume, you can section the block and take the penetration depth measurements, and recover the bullet to check expansion. You will also probably want to get a bottle of the expansion material solvent, because like I said, the stuff is sticky and won't come off with soap and water, apparently only petroleum-based solvents will work.

Almost any caliber, handgun or rifle can be checked, although most rifle calibers will require use of the tube extender. Price for the basic tube is \$69.95 with extenders being priced from \$39.95 to



TOP: OFFICER TIM HALBAKKEN, COLUMBUS OHIO POLICE DEPARTMENT, POSITIONS BULLET TEST TUBE ON SHOOTING TABLE.

MIDDLE: REMOVING OUTER FOIL COVERED CARDBOARD FROM TUBE PRIOR TO SECTIONING.

BOTTOM: 5.7 X28 WOUND CAVITIES, HORNADY 40-GR VMAX BULLET-FIRED FROM FiveseveN pistol.

\$69.95 depending on caliber to be used. The folks at Ballistic Technologies advise me that they are working on a reduced-price version of the tube for defensive handgun load testing, which probably is what most ballistic gel is used for. If you have been at all interested in ballistic testing and don't want to wait for the "experts" to tell you the merits or failings of your favorite loads, don't wait, try it for yourself, ballistic testing is now available for the masses!

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As you can see, one must not be too quick to judge an entirely new design right away. It really takes time to develop an opinion, good or bad, when faced with evaluating a product with this much innovation, and this many unconventional features. As I continued to work with the PS90, my opinion began to change even more. After several sessions at the Union County Sheriff's Office range in Marysville, Ohio during both department M-16 qualifications and Columbus State Community College Police Academy firearms training, I not only changed my opinion on the points of contention outlined above (except the lack of a sling, and for that matter a spare magazine) I have grown to really love this little weapon. Firing really drove home three positive (and innovative) aspects, even though I already knew of two. The first was that the system is totally, and I mean totally, reliable. The second is that there is no recoil, and very little muzzle blast, which was mitigated to some degree by the integral flash hider. The third, be careful when firing the PS90 either from a kneeling or sitting position. You start to accumulate a pile of warm empty casings on your leg since the ejection is straight down, right over the thigh. Also be forewarned that if you are equipped with body armor by "second helping" rather than by Second Chance, you will find your shirt streaked with small black casing sized marks

from the downward ejection against your protuberance. The gun and cartridge make for easy "minute of felon" hits at 100 yards, and some very nice groups at 25 yards and in, the range really intended for this gun. I know you are asking about cartridge performance, and I will get to that, but suffice it to say for now that this thing is loads of fun to shoot, and anyone that handled it had a big smile on before, during and after firing. That was followed by the exclamation "I have got to have one of these!" And those words from shooters who due to their, shall we say, lifetime of experience, have become a bit jaded.

Now for the FiveseveN pistol. This sample I received for concurrent testing was the "Ensemble" set up from FN which included the pistol, three (yes three) 20-round magazines, a compact cleaning rod in a container, tool kit, plastic non-

locking hard case, obligatory padlock, and sample fired casing that can be used to crush crime wherever it rears its ugly head. The cleaning kit is a very nice little affair that contains in the rod handle two brass extensions, a cleaning patch jag, a brass brush, and nylon bristle brush. Also contained is a rear sight adjustment tool, and a magazine catch reversing tool. The FiveseveN pistol is another innovative shooting machine. Of mostly polymer construction (no longer innovative) it is blowback-operated, ambidextrous friendly (not totally ambidextrous like the PS90), and extremely accurate. Although a full-sized pistol, using a relatively long round of ammo, and holding 20+ 1 rounds of said ammo, the pistol weighs in at approximately 21 ounces (1.3 pounds according to the manual) without



VIEW OF ONE OF TWO AMBIDEXTROUS BACKUP FRONT SIGHTS ON PS90. BLADE SITS DIRECTLY ABOVE ALLEN SCREW IN CIRCULAR ASSEMBLY TO THE RIGHT.

the magazine. Speaking of magazines, the only non plastic item visible in them is the spring and a pin. Looking down at them, they have the appearance in terms of the follower of M-16 magazines, and load the same way, by pushing the rounds straight down, rather than down and back. While the pistol is solid black with a steel slide covered in polymer, the operating controls are not. The disassembly latch, ambidextrous safety, slide release and reversible magazine release are battleship gray. I would prefer them all in black. Why help a bad guy who gets a good guy's gun identify its controls? Speaking of the safety, here is one part I rate as odd to unconventional. The safety is located directly above the trigger, on both sides, and is operated by a downward sweep of the trigger finger, exposing a red danger dot. The gun is single-action, and must be carried with the safety

on. With some practice, it can be put in the off position smoothly. But I would rather have it where we are all used to it, for operation by the thumb of either hand. Because the FiveseveN is a true single-action, the trigger is, well, fantastic for a combat weapon. Breaking like a glass rod at 4.4 lbs with a short take up, it rivals the trigger on my Kimber Custom II Eclipse 10mm. There are rear grasping grooves only, on the slide. The sights are a three-dot configuration but very crisp, and the rear sight is adjustable for elevation and windage and is clearly marked. The frame has the now obligatory light rail that also contains the serial number plate. There is also a very, very unobtrusive loaded chamber indicator, a small silver pin that protrudes from the left side of the slide, to the rear of the chamber area. If you wonder what it is like shooting the FiveseveN, just read the shooting comments outlined for the PS90 above. For a retail price of \$899, the package requires less consideration to come up with the words, "good deal" compared to the PS90.

Now for the ammunition. The 5.7 x 28, in its original format as the SS190, was designed to inflict maximum damage after penetration by tumbling. Purposely designed to be stable during flight but to become unstable after penetration, I was skeptical of the damage level that would be

caused by what I deemed to be a less than reliable mechanism, that is projectile tumbling. In the law enforcement arena I was used to determining terminal damage being accomplished by hollow-point expansion or fragmentation. My instincts here appear to have been as wrong as they were about the PS90 carbine. By the way the SS190 is not available, nor has it ever been available, for sale to the general public or even to individual law enforcement officers. It is available only by direct shipment from a bonded FN warehouse to a law enforcement agency. This means that, in the interests of this publication, I focused on the loads mainly available to civilians and cops in stores, the new SS197, of which FN sent me a generous quantity, and the only other civilian available round, the SS195 LF (lead free) which FN also included in the testing package.

Before going further, I must say that the SS197 in particular, is as much imbued with innovation and “cool factor” as the PS90 and FiveseveN are. It is, with the 40-grain blue polymer-tipped Hornady V-Max bullet, a wicked looking little round, and gives the impression of being capable of serious damage, even to dyed-in-wool .45 ACP fans. The SS195LF is not quite as spectacular in appearance with a conventional looking hollow-point tip, but is still an attention getter.

One thing really lacking in the 5.7 reports, is evidence of how much damage the round is capable of; both in terms of self-defense and hunting utility. It has been compared to the .22 Magnum in terms of power by some, and to the 9mm by others. I found that the truth lies somewhere in between.

Armed with a chronograph testing printout done by Officer John Holloway of the Columbus Ohio Police Department, I wanted to see how the energy reported worked out in terms other than on paper. John provided me with the following info. Fired from the PS90, the restricted SS190 duty load chronographed at 2500 FPS (feet per second) and 356 FPE (foot pounds of energy) and at 2150 FPS for 306 FPE from the FiveseveN pistol. The 40-grain VMax SS197 runs at 2100 FPS and 373 FPE from the carbine, while the FiveseveN pistol launches it at 1700 FPS with 302 FPE. In contrast the 9mm, depending on load, generates paper kinetic energy ranging from 301 FPE to 471 FPE. So it can be said that both loadings run, in terms of on paper power, in the 9mm handgun range. The SS195LF on the other hand, because of its 28-grain bullet weight, runs a very high 2450 FPS from the carbine and 2100FPS from the handgun, but only generates 305 and 261 FPE respectively. At least for the handgun, this takes it out of the 9mm category, and puts it in the range of the .38 Special. Still, not bad.

How does it compare with a .22 Magnum? Using a 40-grain bullet from a rifle, the .22 Magnum Rimfire travels at 1910 FPS for 339 FPE and at 1410 FPS for 250 FPE from a handgun. This puts it below the 5.7 by nearly 50 FPE when comparing both rifles and handguns. If the PS90 had a 20-inch instead of a 16-inch barrel, you would see even more ballistic superiority from the 5.7. I also looked at the .17 HMR, one of my favorite cartridges. The .17 HMR runs 2550 FPS from the rifle with 245 FPE and 2125 FPS with 170 FPE from the handgun, both those statistics are using the very light 17 grain VMax bullet.



Another favorite cartridge of mine, the .32 H&R Magnum, is also within the envelope. The 85 gr. JHP load hits 1100 fps with 230 FPE from a handgun. On paper then, the 5.7 has more oomph than a .22 Magnum or .17 HMR, and runs into the low end of 9mm, or high end of the .38 Special and .32 Magnum. Not earth-shattering, but sufficient. But paper, as usual, doesn't tell the whole story.

I took the FiveseveN and a supply of the SS197 ammo to Briar Rabbit Shooting Range in Zanesville (www.briarrabbit.com) for a Saturday Action Pistol Steel Plate match. I also brought my Glock 17 along as backup. Arriving early, I wanted to test the capabilities of the 5.7 cartridge against the steel plates, which are set to drop at a 9mm /.38 Special impact at the bottom threshold. The purpose was to see if I could use the FiveseveN pistol in the match. It was fortunate that I did this because I found that the SS197 rounds would reliably drop plates on a solid center hit only about 70% of the time. To get a 100% rate, it was necessary to hit them near the top or to do multiple hits. It was even worse on the larger, heavier bowling pin targets where only upper hits would knock them over. I felt my shooting skills were not good enough to only aim for the tops of targets, so the FiveseveN went back to the car. So while the 5.7 compares favorably with the 9mm on paper, when it comes to real world work, paper doesn't equal steel.

I wasn't dismayed or concerned about the effectiveness of the 5.7 on human targets. So what if it's not a 9mm and more like, say a .32 H&R Magnum? Well considering I carry a Smith and Wesson six-shot 332 in .32 H&R, and the 5.7 carries 20 + 1 rounds of 5.7, I would still feel comfortably armed--but more info was

needed.

For this I turned to a brand new ballistics testing system, the easy to use Bullet Test Tube (www.thebullettesttube.com). This new ballistics testing system provides a much simpler and more reliable testing method over traditional ballistic gelatin. I again turned to Officer John Holloway for assistance, and informally demonstrated the product for John and some of the range staff at the Columbus Police Department. I had been provided with two of the basic reusable tubes and extenders, although for 5.7 testing, no extender is needed for handgun or carbine. We set up the tube on a steel target table in the indoor range and began firing. The first round we fired, to establish a baseline, was the Winchester 127-grain +P+ LE-only Ranger load. Firing into the target dot in the center of the tube (actually a large green colored cylinder reminiscent of, but nothing like, a very large and long candle), we were rewarded with a straight shot that did not exit the cylinder. Sectioning the tube in half, we found that the 9 mm had penetrated 6.5 inches in the Bullet Test Tube medium, which equates roughly to 8.7 inches of penetration in ballistic gelatin according to the Bullet Test Tube website. Multiply the penetration by 1.34 for equivalent penetration in gelatin. The 9mm test depth seemed shallow, even at 8.7 inches. I have found that in ballistic gelatin tests the

127-grain +P+ 9mm penetrates 12 inches. This would make the comparison ratio something like 1.84. I think there are too many variables here in terms of ballistic gel formulation for total consistency, and the Bullet Test Tube is the more consistent method. The only way to tell which method is “right” would be to compare shots into actual human flesh and blood, which is rather difficult. In any event, both in ballistic gel and the Bullet Test Tube, the 9mm Ranger bullet exhibited similar, and as advertised, expansion. The permanent cavity was approximately 20 mm in width at the widest point. Pretty good performance.

Next came the 5.7 SS197 from the FiveseveN. If the 9mm only went in 6.5 inches, I expect less penetration and a pulverized bullet from the 5.7 x 28 round. At first, after sectioning the second block, I thought I was right. It looked like only three inches of penetration, and I began to lose faith in the 5.7 as a combat round. But one of my Police Academy Cadets who was observing, noticed a faint line following the path further down in the block. I sectioned away more test tube material slice by slice and found the wound cavity kept going and going. We found a very small bullet fragment at about five inches of depth, and then by excavating more material out like an archaeologist, we found the end of the trail and a nicely mushroomed bullet. The 5.7 penetrated a full 7.5 inches with perfect VMax expansion, giving a ballistic gel comparison of 10.05 inches, or if you use my 1.84 unscientific number, 13.8 inches. The maximum width of the permanent wound cavity was roughly 10mm, or half that of the 9mm round, which is to be expected with the narrower bullet. But clearly, penetration was enough to reach vital organs, which was my main concern.

Since we had expended both basic tubes, and did not have time or the equipment to melt them and re-use them (although in hindsight, I may have been able to use the extender tubes for the test, since the penetrations had been shallow), we decided to see how the SS190 restricted use load would perform with a carefully placed shot in a half section of the tube. With Officer Holloway doing the honors we found that the SS190 does EXACTLY what it is claimed to do, and that is tumble upon penetration of soft material. The bullet turned sideways and down, exiting out the bottom of the sectioned half and blowing a one-inch diameter hole in the material that could clearly be looked through! When Officer

Holloway showed me a steel automobile wheel that an SS190 had penetrated when fired from the carbine in earlier testing, I was not impressed. I was AMAZED! The performance of the SS197 had been very good in my book, but I had never imagined that the SS190 would perform like this. The SS195, due to a lack of available test material at the time, was not tested.

With all that being said, what are these civilianized versions of the FN weapons good for, when considering the civilian loads available for them? First, the PS90 Carbine would make an excellent patrol or entry weapon for urban agencies that have concerns about the penetration “risk” of the 5.56mm. The carbine would be perfectly capable with the SS197 loading, especially with its easy multi-hit capability. Just remember, it is NOT a 5.56 and is generating only about a third of the 5.56's energy potential. It would not be my first choice in say, the great Los Angeles bank robbery shootout. With space at a premium in today's cruiser, the PS or P90 sure doesn't use much, and would be very user friendly in terms of recoil for any officer firing it. The carbine would also make an ideal defensive weapon for the civilian who has any concerns about recoil, ambidextrous capability, solid reliability, size and simplicity of operation. I could see it accompanying ranchers in our border area in their pickup trucks as protection against two or four-legged predators, or in the hands of law-abiding citizens evacuating out of a major disaster such as Katrina. As far as the pistol goes, it would make an excellent defensive weapon or perhaps duty weapon in areas where over-penetration and ricochet is a concern. An expanding high-velocity .22 caliber projectile is much more likely to disintegrate on a hard surface than a .38 or .40 caliber one. In terms of training, I have already found that it is a great way to introduce someone to the blast and noise of a defensive centerfire handgun, without the recoil or sometimes heavy trigger pull. While the FiveseveN is large, it is only the weight of a mini-Glock, and I have found it very comfortable for concealed holster or fanny-pack carry. Both weapons can be used for varminting with the FiveseveN offering some real sporting potential.

Ok, it all sounds too good to be true, there has gotta be a downside (besides the cost of the PS90) doesn't there? Well, yes there is. You see that innovative ammunition also comes with a cost. Only recently has the SS197 ammo begun to flow. It is loaded by Fiocchi under the

FN name. For a while, six months or so ago, there was almost NO civilian-legal 5.7 ammo available, it had dried up and had been bought up. I have yet to see any of the SS196 ammo for sale, which is no loss as it offers a red tip 40-grain VMax bullet at 200 FPS less velocity in the PS90 and 100 FPS less in the FiveseveN pistol. The SS197 is now available at certain gun stores and online, but it costs between \$17.50 for 50 rounds online (plus shipping and applicable tax) and \$25 for 50 rounds at retail stores. Ok, if we're talking about a round used in bolt-action varmint rifles (which would put it right between the .22 Magnum and the .22 Hornet--takers anyone?) the cost would be bearable, but these guns are designed for fast-action shooting, as such we need an el-cheapo practice load! The SS197 is great for hunting and defense but we need a basic jacketed non-armor-piercing lead bullet at around \$15 or less a box. I predict as sales and availability of the weapons pick up (when I requested the test PS90, there were only four in the entire U.S., and that was in February of 2006) so will demands for ammo, and hopefully some other manufacturers will develop guns and loads for it. In the meantime, if you have the money and you want something useful, unique, and fun, consider the PS90 carbine, the FiveseveN pistol or both. You won't be disappointed.

Read more! The Gun Digest Book of Assault Weapons is available at www.gundigeststore.com.

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