



**Lightweight
Wondergun** For
the few, the proud
and the crazy

S&W M329



The Smith & Wesson M329 PD is the most significant technical achievement in revolver-making in the last 50 years. Much of its importance is overshadowed by the new X-frame .500, a revolver only in the strictest sense of the word. Despite all of the hoopla over the .500, it is nothing more than an outsized M629. Smith & Wesson could just have easily built a .600. Or a .700. All other things being equal, it is a far bigger trick to make a gun smaller or lighter with no loss of performance. A mere 26 oz., the M329 .44 Magnum is simply an astonishing accomplishment.

But each extreme in weight and performance carries heavy penalties. At 72 ounces and 15" in overall length, the .500 is a boat anchor with all the grace and elan of a fence post. On the other hand, you'd hardly notice the M329, which feels like it's filled with helium and will float away if left unsupervised. That said, the M329 is no more a gun for everyone any more than its ponderous stablemate, for it also generates heavy recoil to which

most shooters can never acclimate. In this brief treatise, we'll put the M329 in perspective, consider its mission and how it fulfills it. But first a bit of history is in order. We didn't arrive at the M329 overnight.

The search for light-weight big-bore revolvers began in earnest in the 1920s with experimental efforts by Elmer Keith, Harold Croft and a few others of like bent. Their single-action .45 Colts were fine for self-defense against two-legged varmints but lacked strength to contain a cartridge suited to defense against serious four-legged varmints. Not until the advent of the .44 Magnum in 1956 did we have a suitable cartridge for such matters. But neither the Ruger Blackhawk or Smith & Wesson M29 qualified as true light-weights. At the time, materials strong and light to handle the high-pressures of the .44 Magnum just didn't exist. Not until the advent of major technological breakthroughs

available to S&W almost 50 years later, did the necessary confluence of power and low weight occur.

Unobtainium

Aluminum has always been an obvious choice for revolver receivers but ordinary aluminum alloys just don't have adequate tensile strength and resistance to deformation, so S&W engineers turned to a recent development in aluminum alloys. In the 1970s, Russian



Stock sights.

Table of ammo and muzzle velocity:

Black Hills 240 gr. JHC
Avg. muzzle vel. 1,260 fps

Winchester 250 gr. Partition Gold
Avg. muzzle vel. 1,204 fps

Grizzly Cartridge Company 300 gr. WFNGC
Avg. muzzle vel. 1,089 fps

Garrett 310 gr. Hammerhead
Avg. muzzle vel. 1,160 fps

COR-BON 305 gr. FP PEN (FMC)
Avg. muzzle vel. 1,123 fps

Federal 300 gr. Castcore
Avg. muzzle vel. 1,141 fps

Black Hills 300 gr. JHC
Avg. muzzle vel. 1,136 fps

scientists had begun experimenting with aluminum alloyed with scandium, a rare element discovered in 1879 in Scandinavia, wouldn't you know it. Adding just 2-percent scandium nearly doubles the tensile strength of ordinary aluminum alloys. Incredible as it is, scandium alloys still are not terribly hard, so the M329 has couple of notable features you won't find on your father's S&Ws. The rear cylinder-pin hole in the receiver has a steel sleeve to prevent elongation and deformation of this surface. Further, no aluminum alloy is proof against high-pressure gas cutting so the top strap is necessarily protected by small steel shield locked into place by the barrel. Nevertheless, scandium was the solution to the receiver weight problem. With this critical piece of the puzzle in place, S&W could undertake a frontal attack on the revolver weight problem.

Tough as it is, scandium aluminum

The HiViz neon-like front sight catches the sun neatly.



A wide cross-section of heavy bullets were fired.

alloys are still not sturdy enough for use in producing highly stressed parts such as cylinders, so Smith & Wesson drew on time-tested titanium alloys. While the folks at S&W are a bit cagey about details, they almost certainly use some version of the 6AL4V family of titanium alloys. These, which are 6-percent aluminum and 4-percent vanadium, are as strong as 4140 when heat treated to hardness appropriate to use in revolver cylinders. While heavier than aluminum, titanium weighs only about 60-percent as much as steel, so this represents a significant weight savings. It is not, however, without its problems.

Titanium is plagued with poor resistance to flame cutting and erosion. Firing just a few rounds of high-pressure magnum ammunition from an unprotected titanium cylinder will shred the muzzle face of the part. Smith & Wesson engineers solved the problem with the application of an ultra high-tech, space-age, heat treatment process. Again, the folks at Smith & Wesson weren't eager to share details but the bluish hue evident on the M329's cylinder face bears a suspicious resemblance to titanium carbonitriding. Subjected to ionized gases of vaporized titanium plasmas and carbon in a vacuum chamber, parts take on an ultra thin coating that is nearly diamond hard and wonderfully resistant to flame cutting and erosion.

What's it good for?

The M329 is an extremely specialized gun whose genuine usefulness is confined

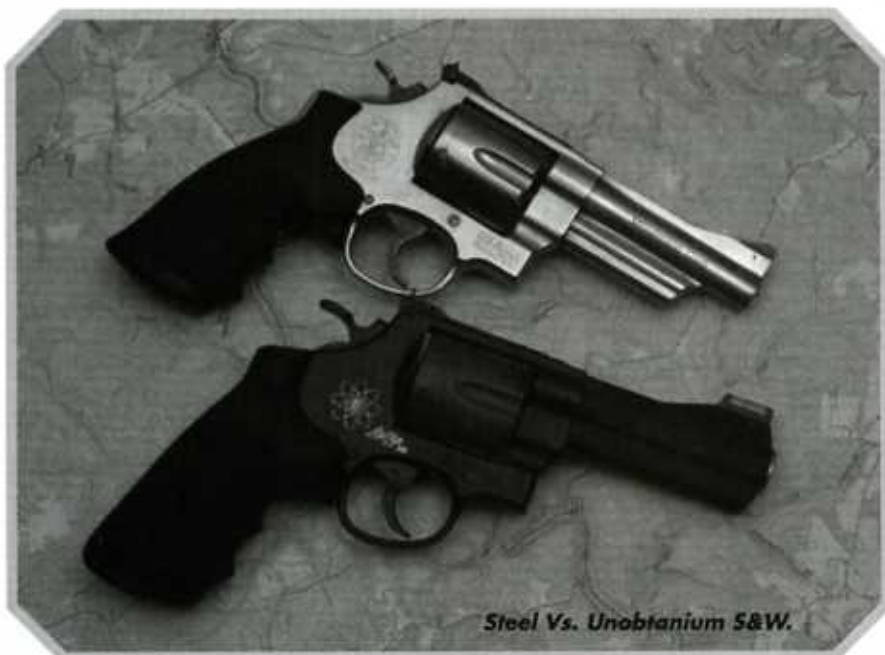
to those rare circumstances where its combination of power and reduced weight are important. Serious treks into the serious bear country, whether hunting, fishing or working certainly qualify as such circumstances. When the chap at the ticket counter for Frontier Air in Fairbanks, Alaska, frowns at your bag and asks you how much you two weigh, it's a little late to get nervous about your stuff. So how good is the M329 for such a mission? Will it work and, if so, for how long?

To answer these questions, we took a new M329 and subjected it to a regimen of measuring, shooting and testing. Before the first shot was fired, we ascertained the gun was in spec with respect to head-space, cylinder end-float and carry-up timing, then recorded the numbers for future reference. We did not intend to shoot the gun to any great extent simply because this was not a 'torture test' of the gun (nor, more importantly, of the shooter). Every gun has a service life and we wanted to find out what it was for our purposes. A gun used in this narrow set of circumstances would never ordinarily be shot beyond testing, sighting and a bit of rare shooting for purposes of maintaining familiarity. If this gun functioned well for even 200 rounds with heavy-bullet, high-performance ammunition, the M329 would be a howling success and well worth every penny of its reasonable price.

Just A Toy?

Without the .44 Magnum cartridge, the M329 would be nothing but a coffee table toy, interesting because of its airy handling. The first revolver cartridge capable of reasonably effective performance on big game, the near 50-year old .44 has long since been eclipsed in terms of raw horsepower by the .454 Casull, the .475 Linebaugh and the .500 Smith & Wesson. The ubiquitous .44 Magnum is hardly out of the hunt, however, thanks to modern loadings with 300-330 gr. bullets. Its smaller frontal area may cost it something in terms of knock-down power but with heavy bullets this mean means high sectional densities, a key component of penetration. Wonderful as it is, this ammo is not without potential for trouble in the M329.

Virtually all contemporary ammunition manufacturers, both large and small, produce ammunition which comports with pressure specifications laid out by SAAMI. You might imagine heavy-bullet ammo would not be a problem in any .44 Magnum because it generates no more pressure than ordinary 240 gr. high-vel ammo. Perhaps so. But, as anybody who builds and shoots heavy revolvers to any extent can tell you, guns do many odd things in the face of heavy recoil. Ejector housings fall off, pins can shear, screws loosen and grip panels can crack. Guns seem to go out of time and develop head-space and cylinder end-float more



Steel Vs. Unobtainium S&W.



All the important bits held together.



Metal insert at forcing cone protects the top strap.

quickly. But ammo problems were our first concern. Not without good reason does the M329 owner's manual advise testing of ammo for bullet-crimping problems. Recoil in this gun is not only heavy, but extremely fast and tends to tax crimping.

Testing for bullet creep is a simple matter. We procured a representative variety of heavy-bullet loadings (and a couple of ordinary ones) and measured and recorded the overall lengths of a sampling of the candidate cartridges. Six of each were loaded with one marked and designated the test "victim." Five were fired, then four more and then the unfired test round measured. None of the 300–310 gr. loadings we tested showed more than about .015" of bullet creep. Oddly enough, the Winchester 250 Partition Gold showed over .080" of creep, enough to cause ballistic variations. These cartridges did not exhibit the extreme neck tension and roll crimp of the rest, which probably accounts for the problem. Reloaders would be well advised to conduct similar tests of their own products.

Extraction was the other serious concern. One excellent 300 JSP round simply wouldn't extract with normal hand pressure and required recourse to hammer and dowel. The Garrett 310 load hinted at extraction stiffness so it's well to try an assortment of suitable cartridges before heading afield. Whether titanium's metallurgy played a role in this is hard to say. Certainly, the material is harder to machine smoothly and the chambers of the test gun show more roughness than typical of steel parts.

This Won't Hurt

Most press accounts have left shooters largely terrified of the M329's recoil and numbers in the tables certainly justify the terror. Recoil energy is one measure of abuse and the M329 has as

much as any of the rest, right up there with the .454 and .475 Linebaugh. Where it really gets ugly is in recoil velocity, where the M329 grimly outshines the rest and shows its dark side. Yes, it does kick. Indeed, with hot 300-grain loadings it hammers viciously. But not so much that seasoned big-bore shooters can't master it. Here's the poop.

Before ever shooting the gun, give away the lovely wood grips and the supplied Hogue rubber grips, as well. Ring the nice folks at S&W and order a set of the proprietary Hogue grips for the X-frame .500 which just happen to fit the M329. These have a small Sorbothane pad at the upper end of the back strap, right where the other grips slaughter the web of your paw. Further, these grips are slightly thicker in section, which spreads the recoil load a bit. With these grips, a real hero can probably manage 50 rounds before his hand drops off. Which leads to the next observation.

You're not supposed to shoot this gun very much. Just enough to regulate the sights. Even then, shoot just 5-10 rounds of high-performance ammo at a time. If you must practice, use some weenie loads or a heavier gun.

Yet another trick is to practice with a shooting glove, which supplies an extra measure of insulation from the gun. If the trigger guard knuckles you badly as it does some of us, rig up some sort of finger protector. Even a little padding under some tape will do.

Life's Mysteries

Aside from grips, some shooters will want to make other changes. The sights are a mixed bag, at best. While the red rod/dot front sight gathers light well enough in good light, it is useless in poor light conditions such as those encountered at dawn and dusk. White paint shows better in bad light than anything short of tritium, so a shallow V-notch with white post rear and a white dot front sight combination would be superior. For traditionalists, the best compromise of precision and light gathering is the



