



Based on the 460 Weatherby case necked up to .550", the .550 Magnum is intended to drive a 700 grain bullet at 2400 fps.

TAR Exclusive Report

New Stopping Rifle On A Fast Track

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by Robert H. Boatman

New cartridges that are not launched off the roof of a major factory on the wings of a seven-digit marketing budget rarely make it to the mainstream. It's normally an arduous and time-consuming journey for the few that do. You would think a tradition-steeped group of shooters like African dangerous-game hunters, with a long history of classic and completely proven cartridges to fill every niche, would be even more resistant to upstart wildcats than anybody else. All of which makes the rapid development and widespread acceptance of the new 550 RNS Magnum a startling phenomenon indeed.

But then, the 550 RNS Magnum does not conform to our usual definition of a wildcat, which is a hot-rodded variation on an existing cartridge in an established bore-size. For one thing, there hasn't been a rifle made with a .550-inch bore since the advent of smokeless powder. Smoothbore 28-gauge shotguns, yes. Rifles, no.

With the current ready availability of factory rifles chambered in dangerous-game calibers like 375 Holland & Holland, 416 Rigby, 404 Jeffery, 458 Lott, even 450 Rigby and 505 Gibbs, and with the constant back-up presence of a well-armed Professional Hunter in virtually every African hunting environment, you might well ask, What hunter needs such a monster stopping rifle anyway?

Well, there is the fact that the most widely hunted dangerous game in Africa is also the most likely to charge and the most difficult to stop. Add to that the dangerous-game hunter's code that says you need to get up close and personal before you shoot because, otherwise, dangerous game is little different from plains game. There is the self-assurance of being reasonably confident that one convincingly placed shot can get the job done, the satisfaction that comes from reducing the chances any back-up may be required. There is much to be said for feeling fully up to delivering a knock-out blow to a hard-as-nails World Champion Cape buffalo.

Besides, if you think big guns are fun, then the bigger they are the more fun they may be.

They don't come much bigger than the 550 RNS Magnum developed by Raymond Neal Shirley. If you insist on tracing genealogy, it can be said that the parent bore of the 550 RNS Magnum is the 55-100 Maynard of 1882 and its parent case is the 460 Weatherby Magnum of 1958, but the 550 RNS of 2005 is a very different cartridge from either of its ancestors and has capabilities important to the dangerous-game hunter which far exceed those and most every other sporting cartridge on the planet. A modest load launches a 700-grain, .550"-diameter bullet at 2150 fps, thereby delivering 7,200 foot-pounds of kinetic energy at the muzzle and a Taylor Knock Out Value of 118. Rifles in this power category developed over the last hundred years can be counted on the fingers of one hand. When velocity is increased to 2300 fps, muzzle energy goes up to 8,222 ft/lbs, which is the equal of the gigantic 600 Nitro Express in a vastly smaller package. The 550 RNS is clearly designed not just to efficiently dispatch a dangerous and determined animal but to plain stop it in its tracks. Drop it right now. End the argument no matter how compelling the horned beast at the end of your muzzle may be.

Mike Scherz, developer of the prototype 550 RNS Magnum rifle, says, "Neal did a lot of computer work before he started load development, then went out and fired and readjusted the computer model for percentage errors, so realistically we know we can easily push the velocity with a 700-grain bullet to 2300 fps and beyond at expected pressure level below 48,000 psi. The cases just fall out."

Low chamber pressure was one of the design parameters Neal Shirley defined in the beginning. High-pressure cartridges that stick in the chamber under the hot African sun haunt more PH dreams than images of black mambas

under the bedsheets. Pressure tests of the 550 RNS Magnum are being conducted under the sun in Yuma, Arizona, where the average high temperature in the midsummer shade is 107 degrees Fahrenheit.

There were other design parameters as well. "The whole project was to fit the most horsepower in a standard magnum action," Scherz says. "Neal wanted it to fit an H&H box and a .700" bolt, so the rifle could be built on a \$500 action, not a \$3,000 action. He envisioned it as a practical, working rifle. I built the prototype on the CZ 550 Magnum, because that's the most reasonably priced Mauser-type controlled-round-feed action available, and it's a very good one. The cartridge fits perfectly in CZ's standard box and standard bolt diameter with very little adjustment. The 460 Weatherby head diameter was the one Neal chose because it's readily available, there's plenty of brass out there, and it's the strongest commercial brass you can get. He made it longer, blew it out and created a new bore diameter."

Maybe it was the new bore-size that did it. After all, there is little between .458 and .620, nothing at all between .510 and .585. When Neal Shirley asked the original question, *Why hasn't anybody done more between .458 and .585?*, part of the answer was that there were no barrels and no bullets. That changed almost overnight.

When Shirley came to Scherz with a one-off dummy case, a hand-turned bullet and spec's for the action, he said, *This is what it needs to look like, now let's build a rifle.* Scherz says, "It was designed as a complete project, with the cartridge and rifle working together as an entity. The whole thing was designed in one piece, seamless."

Neal Shirley did not suffer the handicaps under which most new cartridge developers must labor. He was under no obligation to fit existing bullets to an existing barrel and rifling twist. He started from the beginning and went the distance. Shirley and Scherz together transformed creative concept to killer reality.

Word leaked out. At first it was an Internet phenomenon. The website www accuratereloading.com, with its highly active African Big Game Hunting, Big Bores, and other forums, is the favorite cyberspace hangout for computer-literate PHs and serious dangerous-game hunters from all over the world. The almost always knowledgeable, often intense, and sometimes extremely high level of discussions that go on here are regularly followed by rifle, ammo, component and accessory makers with major equity in the African hunting marketplace. In this dynamic meeting ground of experienced and sophisticated hunters, a place where the names Paul Mauser, John Rigby, George Gibbs, John Taylor, J. A. Hunter and a host more are as familiar as the name Santa Claus is to children, where **José Ortega y Gasset** is quoted by people who have actually read his works, the 550 RNS Magnum quickly became a hot topic of conversation. The experienced hunters talked, the alert manufacturers listened.

A vigorous proliferation of quality components from barrels to dies to loaded ammunition soon followed, transforming electronic chat into wood and steel, and supporting a groundswell of interest in getting behind the new cartridge/rifle



.416 Rem. next to a .550 Magnum Cartridge

combination in the big ring. It shouldn't be long now before we find out for sure just how well the 550 RNS Magnum performs in the flesh-and-blood arena of Africa . In the meantime, here's what it looks and shoots like on paper, and in the juniper hills outside Prescott , Arizona .

The Scherz prototype rifle is built on a CZ 550 Magnum action. The stock bolt-face was opened up a little and some rail work and bottom receiver machining performed so the magazine holds three of the big cartridges with no feeding problems. The action and barrel are fully bedded in a plain walnut stock. The custom contoured Scherz-spec'd barrel is 26 inches long, with single-point cut rifling and a 1-in-20" rate of twist. The contour was arrived at to shift the balance of the heavy barrel rearward while accommodating standard front sights, and the rate of twist was determined by Department of Defense computers running sophisticated ballistics programs as optimum for stabilizing 600- and 700-grain bullets.

As an aside, Neal Shirley has an ATF letter specifically exempting the rifle/cartridge from the over-50-caliber rule as a sporting gun. Sounds like an obvious ruling, but for those who think Republicans and Democrats are the same, no such letter was ever issued to any sporting rifle maker during the Clinton administration. Non-binding verbal permission to manufacture, temporary by definition and subject to denial at any time, was the most anyone could expect from a bureaucracy headed by Democrats.

The prototype rifle, which weighs in at 12 pounds with its 26-inch barrel, handles more like a 10½-pound rifle with a 24-inch barrel. Shooters invariably comment on the big rifle's excellent balance and handiness, which is a credit to its careful design. Scherz says, "One of my premises from day one is that every rifle, especially a DGR rifle, has to fit and point like a shotgun, it has to be configured and balanced so you can shoot it with your eyes closed."

Another surprising thing about the rifle is its recoil, or rather its relative lack thereof. The delivery of more than 7,000 foot-pounds of energy downrange is normally accompanied by a major thump on the other end. The fact that the 550's recoil feels more like a warm 458 is attributable to the rifle's weight, its stock design, perhaps to low pressures in the chamber and, according to Mike Scherz, a factor I've never heard anyone discuss in the context of recoil before.

"It's been demonstrated that rifling twist is responsible for between 30 and 38 percent of recoil," Scherz says. "When the projectile contacts the rifling twist, slows down and starts rotating, the rifle begins to move. I've seen a 600 Nitro Express torque right out of a guy's hand. If you spin the bullet faster than you need to for stability, you're just creating unnecessary torque and recoil. At a lower twist rate, the pressure spike is not nearly as steep, it's more of a gentle curve."

Barrels for the 550 are already available from several sources, some with different contours and twist rates. Dan Pederson in Prescott (www.cutrifle.com) did the original prototype barrel and is set up to do more custom barrels with any contour and twist you want. Pac-Nor already has .550 barrels up on their website. There are at least a couple of others, including Truvelo in South Africa . And Mike Scherz supplies his own barrels with his custom guns or as a separate component.

Appropriate Mauser-type actions are available from CZ-USA, Granite Mountain Arms, Fred Wells, Empire and Waffenfabrik Hein, all of whom have expressed interest in working with 550 RNS Magnum custom builders.

Neal Shirley is working with many different companies to produce large custom runs of bullets, including jacketed bullets, hard-cast lead, and bronze solids from Alaska Bullet Works, Bridger Bullets, C&H Tool & Die, GPA bullets, GS Custom, Hark Bullet, JADA Enterprise, Lost River Ballistics, and Woodleigh. North Fork is working on a line of .550 bullets, and Barnes has signed a letter of intent to make monolithic grooved solids in .550. Let's hope the new Barnes Triple Shock X bullets are not far behind.

Reloading dies, case trimmers and other reloading accessories are being made by C&H Tool and Die, based on reamers available from David Manson. Midway has a variety of accessories in stock. Loaded cartridges are being produced by Quality Cartridge and Superior Ammunition. And head-stamped brass is or will soon be available from Quality Cartridge, Horneber in Germany , A-Square, Bertram, and Jamison International (Mast/Bell). Overall shorter cartridges that still work in the 550 chamber can be formed from 378 and 460 Weatherby cases using expander dies that are included in the C&H die set, an indication of the inherent versatility of the 550 RNS Magnum cartridge and a possible harbinger of new product developments to come.

Mike Scherz says, "Look at that case and tell me why somebody didn't think of it sooner. All of the people we've shown it to in the industry, they say it's too simple, why didn't somebody think of it sooner. I'll tell you why they didn't think of it sooner – because they all went to the same school, nobody thought outside the box and said, *Let's make a new bore diameter to fit our requirement*. We've had lots of wildcats on the 458, the 510, 585, 577, but nobody designed anything that needed a new barrel and a new bore. They were trying to neck a case down to 45-caliber, dealing with the bottleneck cartridge phenomenon, going for velocity that was too high, barrel twists that were too fast, building guns that were powerful on paper without regard for shootability and the kind of practicality needed by professionals. We weren't influenced by anything, we just went our own way.

"The 55-caliber makes everything work. A lot of ballisticians are shocked with what Neal did with the cartridge, the low pressure, the velocities, sheer energy, momentum. Right here is where all the ballistics curves intersect in a unique way, all the curves come together at .550. It seems to be some kind of sweet spot, one of those special zones. Nobody foresaw that."

Scherz has built more than 300 complete custom rifles in his career as a gunsmith and a stockmaker, many of which have traveled to Africa and Alaska. Both he and Shirley are committed to totally supporting the new cartridge. Everything related to the 550 RNS Magnum will be available at one place, complete rifles or any and all components. Yet neither Scherz nor Shirley have any interest or intention in keeping everything proprietary.

"We're not going to make the mistake Apple Computer made," says Scherz. "We're opening it up. We can sell you a custom gun or anything you want so you can build your own or have your favorite gunsmith and stockmaker build one for you. We're not going to try to restrict access to anything we develop."

The 550 RNS Magnum has been on a fast track for little more than a year, and is already emerging into the mainstream of serious big-bore rifles. As Mike Scherz says, "It's not a wildcat when you can buy from four barrel suppliers, three brass makers, a die maker, go to Midway and buy supplies, buy bullets already made in six or eight different styles, buy a CZ .375 over the counter and just open it up a little and screw the new barrel right in."

No, it is not a wildcat. The 550 RNS Magnum is a new cartridge and rifle especially for that most noble group of shooters – the hunters of dangerous game. You've got to think that Mauser, Rigby, Gibbs, Taylor, Hunter and Ortega y Gasset would like it. And so would Santa Claus.

Robert H. Boatman is the author of Living With Glocks (Paladin Press, 2002), Living With The Big .50 (Paladin Press, 2004) and Living With The 1911 (Paladin Press, 2005). He is currently at work on a book about dangerous-game rifles, and can be reached at interboat@aol.com.