

The .458 BELTED BEHEMOTH



Based on the Ruger Maximum frame with Bisley grip strap, this five-shot revolver takes a shortened .458 Winchester Magnum cartridge.

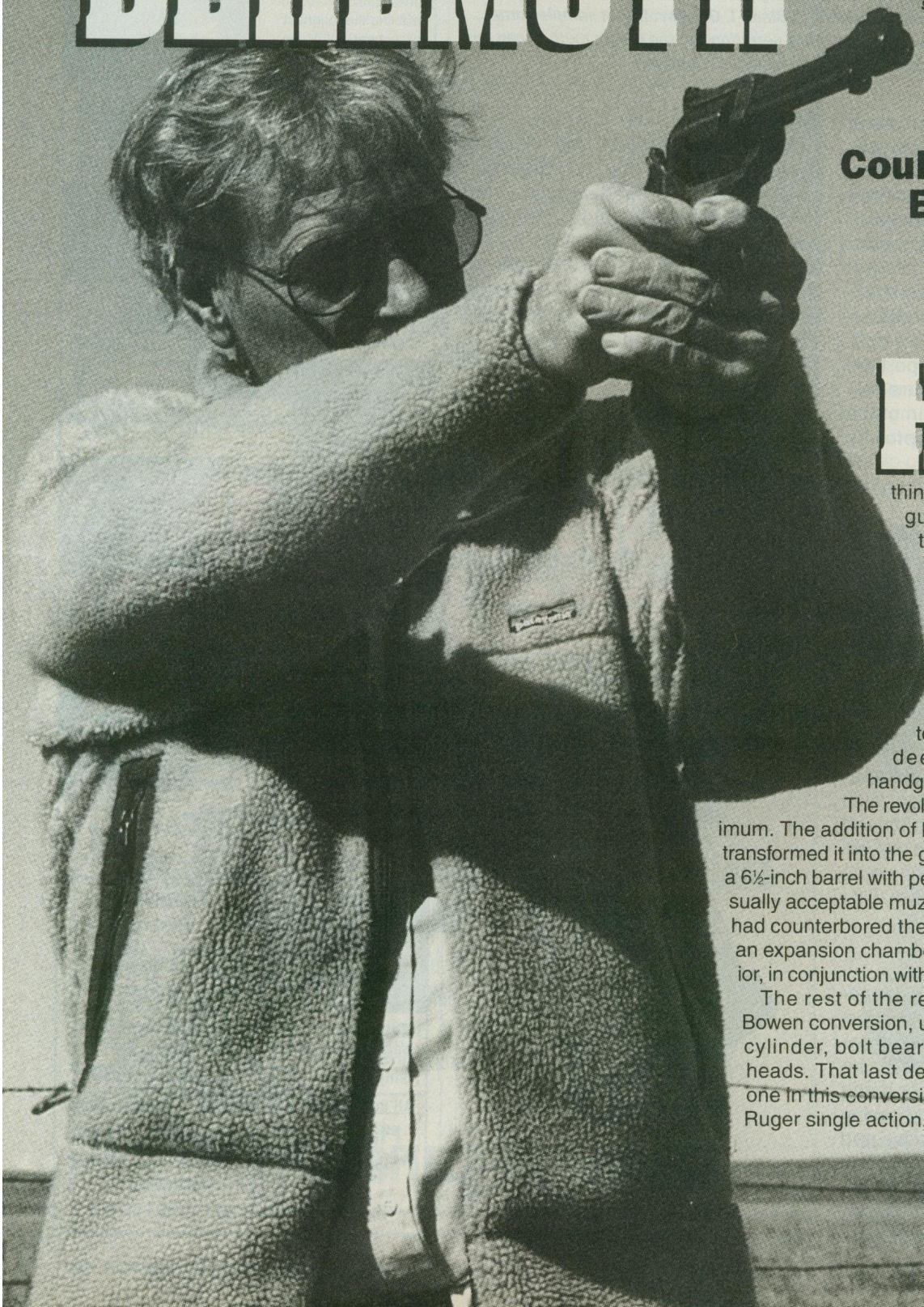
Could This Monster Be the Ultimate Hand Cannon?

By R. Seyfried

Have we gone too far? Is there any sane reason to put a shortened .458 Winchester Magnum in a revolver? Would it do anything that the proven rimmed handgun cartridges would not? All of these questions and more reeled through my head at the very suggestion that I test-drive a new Bowen ".458 Maximum" revolver. After a few moment's consideration and the application of a pair of calipers, my concern turned to intrigue. I was again shoulder-deep in a new super-powered handgun project.

The revolver itself began as a Ruger Maximum. The addition of hammer, trigger and grip frame transformed it into the grand Bisley configuration. It had a 6½-inch barrel with perhaps the most effective and visually acceptable muzzle brake I can imagine. Bowen had counterbored the last inch of the barrel, creating an expansion chamber. I will tell you about its behavior, in conjunction with various loads, a bit later.

The rest of the revolver was a straightforward Bowen conversion, utilizing an ultraprecise five-shot cylinder, bolt bearing block and recessed case heads. That last detail is an important and critical one in this conversion. If there is a weak link in the Ruger single action, it is the loading gate. If a stan-



ard revolver is fired without a cartridge (empty or loaded) in front of the loading gate, the gate can pop out of its recess. When this happens, the gun is out of action until some rather ticklish repairs have been done. By altering the cylinder configuration to recessed case heads, that is, chambers that put the head of the case flush with the breech surface of the cylinder, the cylinder itself supports the loading gate. With the recessed-case cylinder in position the gate is secure, even if the gun is fired with only one round in place, no matter how powerful that round may be. The recessed head principle works perfectly with the .45 Colt rim size, but larger rims, such as the .45-70, actually cause too much metal to be cut away from the cylinder. A recessed .45-70 head would either protrude through the edge of the cylinder, or leave a razor-sharp, thin strip of steel at its extremity. A belted magnum case has a head diameter great enough to accommodate bullets up to .475-inch diameter, while offering a small enough "rim" to be recessed.

Most important, that belt gives positive headspace, just like a rim, in contrast to the large-diameter rimless cases that unsuccessfully attempt to headspace on their case mouths. Unsuccessfully, that is, in revolvers with heavy bullets and heavy recoil. The only modification to the belted magnum cases, beyond cutting to length, is a very necessary deep-inside

reaming. The case walls are very thick and tapered down near the heads where 1.6- or 1.4-inch revolver cartridges will hold their bullets. Reaming to a uniform .012-.015-inch wall thickness all the way to the web creates a correct revolver case and maximizes available case capacity. An RCBS inside neck ream die was used, with the usual perfect results. (Formed cases are available from Belt Mountain Enterprises).

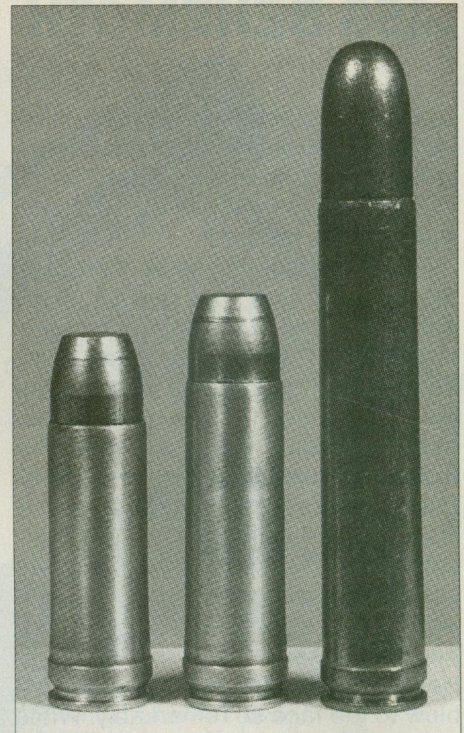
While an increase in diameter from .452 to .458 inch is absolutely meaningless in terms of ballistic or terminal performance, it opens some very interesting doors in terms of available jacketed bullets. Now instead of being restricted to "handgun" bullets, we can choose from jacketed bullets with substantial weight that are designed to work at medium rifle velocities, bullets designed for the .45-70. We no longer need to struggle to find a reasonably tough revolver bullet as heavy as 300 grains—we can start there. I began my load development with jacketed .45-70 bullets ranging in weight from 300 to 400 grains in the maximum-length 1.6-inch cartridge. This is a good time to point out that the "maximum" revolvers and their 1.6-inch cartridges are almost a moot argument due to the general lack of Ruger Maximum frames. However the maximum-version revolver serves our purposes very well, because after testing the 1.6-inch cartridge, it also

permitted testing of the 1.4-inch cartridge that is usable in standard Bisley/Blackhawk frames.

I began with a pair of 300-grain bullets. The first was the Hornady hollow-point, a bullet that I expected to expand too much. However, it ultimately proved to have the best penetration of any of the jacketed .45-70 bullets that I tried. I was able to push it just short of 1,700 fps in the five-inch barrel. (While the actual barrel was six inches, the compensator cut the effective length to five inches). The Hawk 300-grain flatnose, .025-inch



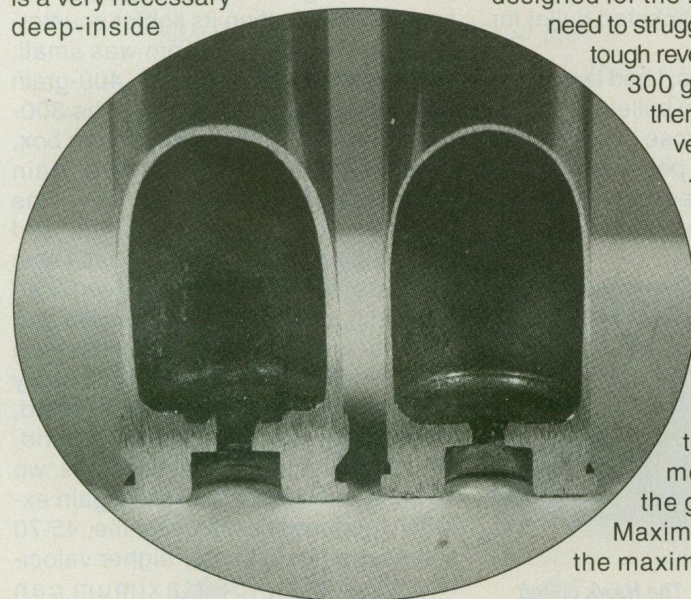
From left: .45 Colt, .454 Casull, .458 1.4-inch, .458 1.6-inch. While the .45 Colt remains the most practical cartridge, the belted magnum rounds demonstrate the ultimate in ballistic performance from the .45 bore, easily outdistancing even the .454.



The belted magnum revolver cartridges are shown here with the parent .458 Winchester. The adaptation of the belted magnum case to a revolver makes a reliable and extremely powerful package.

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The .458 brass (left) is thicker and heavier than the .454 Casull's. While the mass reduces relative case capacity somewhat, the great strength is apparent.



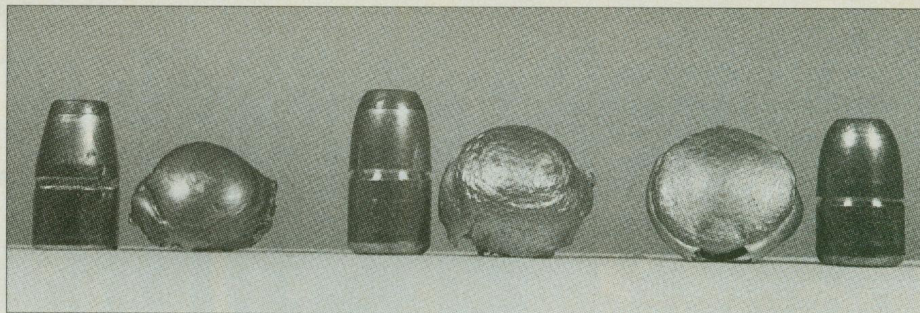
Cast bullets allow maximum performance from any powerful revolver. Note how the LBT designs put a maximum amount of bullet outside of the case, using identical noses on the 360- and 407-grain bullets.

.458 BEHEMOTH

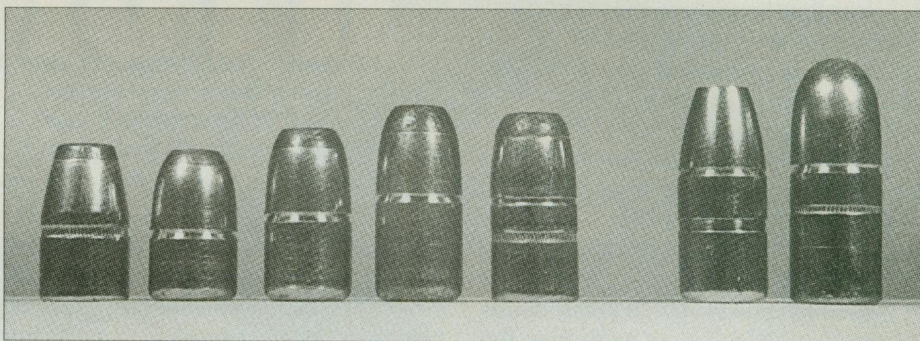
jacket, ran just behind the Hornady in velocity and well behind in penetration due to its very large frontal diameter. The expanded bullet looked like a quarter with a small shank behind it.

The loads, burning large charges of the relatively slow 1680 powder, made me very aware of the compensator in the muzzle. The 300-grain loads, being less efficient than those with heavier bullets, seemed to have much higher muzzle pressure than the others. This higher pressure up front, combined with the holes, resulted in extreme muzzle blast. The only other firearm that I can remember fully duplicating the phenomena was the compensated .416 Weatherby. Each shot brought an almost painful pressure wave into my face. Heavier bullets did not demonstrate the blow to the face so remarkably. While the ports did reduce muzzle rise somewhat, they also seemed to drive the recoil more directly into my hand.

The only 350-grain bullet that I had on hand for testing was a Hawk hollowpoint with a .025-inch jacket thickness. Maximum loads delivered velocities at or over 1,450 fps. It expanded to a large, rounded frontal shape and stopped in 12 inches of wet paper, where the Hornady 300-grain passed through more than 18 inches on average. This was an improvement over the 300-grain version because it opened more quickly and folded the jacket back some. The Hawk performance may not be all bad, especially if light whitetails were the target, but it would give me cause for concern on a big hog. Perhaps the best combination would be the Hawk 350-grain flatnose with an .035-inch jacket thickness. This should limit expansion, keeping the frontal area small enough for the momentum available. Unfortunately I did not have this or the Hornady 350-grain round nose to try. The Hornady might be getting too tough to expand at 1,500-



Jacketed bullets show different expansion and penetration characteristics. The 300-grain Hornady H.P. (l) penetrated more than the 350-grain Hawk (c) or the 300-grain Hawk (r). The large flat frontal surface of the 300-grain Hawk offered the least penetration of any bullet fired, in spite of nearly 100-percent weight retention.



Moving to .458-inch diameter opens the door to the use of a wide variety of factory jacketed rifle bullets. The .45-70 bullets (from left: 300 Horn., 300 Hawk, .350 Hawk, .400 Hawk and .400 Speer) gave good to outstanding performance, while the two .458 Winchester bullets—400 Swift and 500 Hornady—are not usable in revolvers due to their great length that reduces case capacity.

CARTRIDGE CAPACITIES	
CARTRIDGE	CAPACITY (grains of ball powder)
.45 Colt	42
.454 Casull	47
.458 1.4-in.	51
.458 1.6-in.	56
.475 Linebaugh	55
Case filled to the mouth with AA 1680 powder	

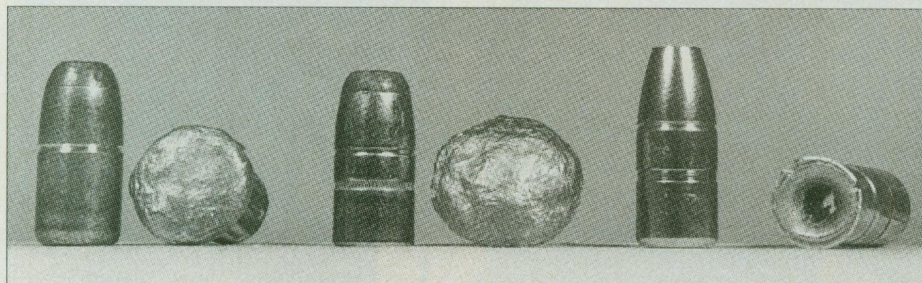
fps muzzle velocities, but if it would slug up its nose at all, it could be an outstanding all-around jacketed bullet for this cartridge.

Moving to 400 grains, I had two realistic and one pipedream bullet to try. The 400-grain Speer flatnose bullet moved happily at 1,320 feet per second, with the Hawk about 20 feet behind. Here the Speer bullet was bothered by the

oversize mushroom that had plagued the lighter Hawks. While looking big and beautiful, it simply presented too much frontal surface for the bullet's momentum to push past the 15-inch mark in the penetration box. When we are firing a bullet as heavy as 400 grains, there is good reason to ask for more penetration, thus this relatively "soft" bullet would not be a high choice on my list.

The 400-grain Hawk began to behave differently than its lighter counterparts. Now the mushroom was small, with a good long shank. The 400-grain Hawk bullets stopped beside the 300-grain Hornadys in my penetration box. My unrealistic hope in the 400-grain category was the Swift A-frame. I was asking a man to do a boy's job, and when they failed to expand at all I was not surprised. Two factors worked against it: its high-velocity shape and construction, combined with the long bullet length that limited case capacity and velocity. At 1,200 fps the pointed, tough bullet simply could not expand. Actually, at handgun-velocity levels, we do not need "super" bullets to gain excellent performance. Most of the .45-70 bullets are designed for higher velocities than the .458 Maximum can achieve, thus we do not have to worry about them flying apart as so many of

(continued on page 92)



Four-hundred-grain bullets demonstrated different kinds of performance. The Hawk on left could be described as perfect, while the Speer (c) has too much diameter. The Swift on the right is not intended for the low velocity levels and generally failed to expand significantly even with a drilled hollow point.

.458 BEHEMOTH

(continued from page 46)

the jacketed handgun bullets will do.

Because I knew you would ask, yes, I actually did fire the 500-grain .458 Winchester bullet out of the revolver. Its great length left only 25 grains of powder capacity, and with the powder that I was brave enough to try produced only 1,000 fps. It is not a good idea—forget it!

With this handgun, like all others, if you want ultimate performance you will get it from cast bullets, specifically LBT shapes. I had two to test, 360- and 407-grain weights, both with the LFN (Long Flat Nose) shape. The 360 could be driven over 1,500 fps and in its heat-treated state of hardness, penetrated over 36 inches of wet paper, leaving an initial wound channel nearly as large as any of the jacketed bullets. The 407-grain bullet managed over 1,400 fps and tore the back out of my penetration box. The cast bullets, true to form, could be driven faster than a jacketed one of equal weight. The self-lubricating lead bullets that do not slug up under pressure create less bore friction. At the same time the big flatnose creates massive tissue damage, without expansion. Of course, many shooters are going to continue to demand an expanding bullet. With that in mind, the tough "rifle" bullets will offer

fine performance as long as the bullet design is matched to the game.

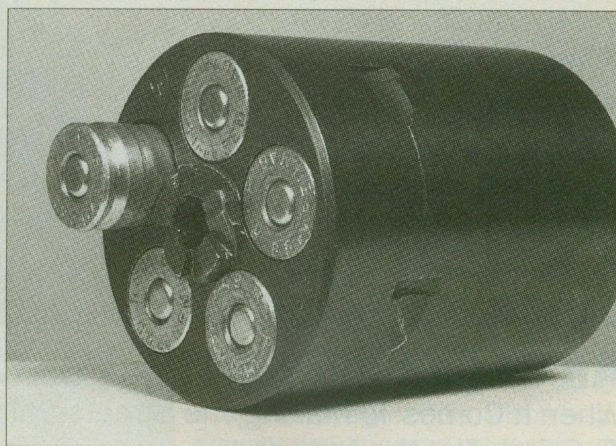
When the same revolver was tested using the 1.4-inch cartridge, velocities for most bullets dropped between 50 and 100 fps. The standard-length cartridge liked both the 300-grain Hornady jacketed bullet and the 360-grain cast. I believe this cartridge, like the .45 Colt, will be at its very best with bullets weighing between 300 and 360 grains. While heavier bullets work, they will not offer maximum benefits.

Loading the two cartridges was very straightforward. I did not seek any reduced loads, although they could be achieved with the mid-speed handgun powders such as Blue Dot and HS-6. I used H-110, 296 and Accurate Arms 1680 for all shooting. The slower 1680 is suitable only in the Maximum-length cartridge, and with bullets weighing 350 grains and over will deliver fine

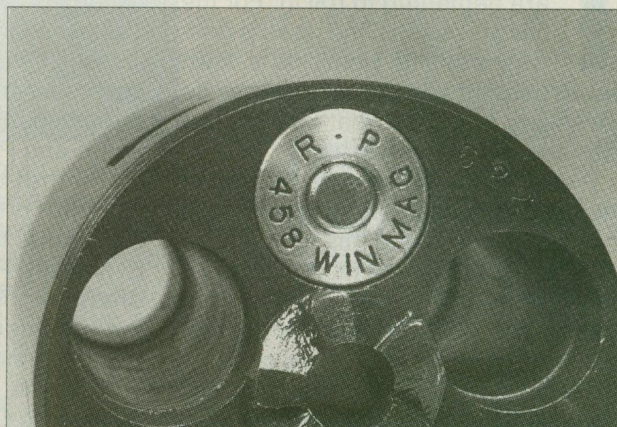
velocities at reasonable pressures, with 100 percent density loads. The faster powders, Winchester 296 and Hodgdon H-110, gave the highest velocities, but there is enough room in the case for a significant overload, and with heavier bullets it seems to run at higher pressures.

The 1.4-inch case lacked the capacity to gain full velocity with 1680. It, like the .45 Colt, is perfectly suited to H-110 and WW-296.

Looking at the data leaves the nagging question of whether or not the cartridge contributes enough horsepower to justify its use over the .45 Colt in five-shot revolvers. Keep in mind that the



The belted magnum cases can be chambered in a way that makes their heads flush with the breech end of the cylinder.



The appeal of looking at the .458 WIN MAG head stamp in a revolver cylinder will attract many.

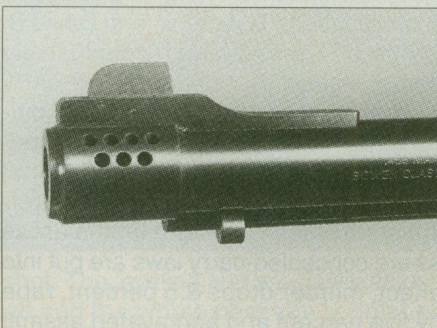


Three powders were used in the .458. The H-110 and Win. 296 were outstanding in both 1.4- and 1.6-inch cartridges, while the slower AA 1680 was useful only in the larger capacity of the 1.6-inch or "Maximum" version.

CARTRIDGE VELOCITIES

BULLET	VELOCITY	
	1.6"	1.4"
300 Hornady H.P.	1,690	1,620
300 Hawk F.P.	1,620	1,600
350 Hawk H.P.	1,450	1,400
400 Speer	1,320	1,270
400 Hawk H.P.	1,300	1,250
360 LFN Cast	1,520	1,460
407 LFN Cast	1,420	1,330

Table illustrates typical results for .458-inch cartridge fired from 5½-inch barrel. Add approx. 30 fps per inch of barrel up to 10 inches. (Actual loading data will be furnished with revolvers, by their maker.)



This revolver was fitted with an integral compensator. While it reduced muzzle rise, the author found the blast unpleasant.

data was generated in a five-inch barrel. Moving to a seven-inch tube would increase velocities between 60 and 70 feet per second. If we view these velocities as being at least 100 fps and closer to 150 fps beyond the capability of the Colt, and considerably faster than the .454 Casull, especially in the short-cylindere Freedom Arms revolver, we have a viable argument for the belted magnum case. Also, there is the selection of jacketed bullets that in most cases will offer superior performance on game when compared to run-of-the-mill .452-inch handgun bullets. There is also the undeniable spectator appeal of opening a gun and looking at a headstamp that says ".458 WIN MAG." Ultimately, if you want a .45-70 rifle that holds five shells and fits in a tidy belt holster, this is it.

DIRECTORY

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(Formed cases for short .458 and other revolver cartridges)
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