

Handloader

The Journal of Ammunition Reloading

May-June 1984

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Handloader

The Journal of Ammunition Reloading

May-June 1984

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ON THE COVER

Pictured here are a conventional aluminum mould from NEI, and one of their new brass moulds. That Pro-Melt furnace in the background is one of the originals. Current versions wear RCBS green. Photography by Randy Swedlund.

READER BYLINES

Three 9.5mm Wildcats

Dear Mr. Simpson:

Your comments about "a superb woods cartridge" (the .356 necked up to .375, *Handloader* No. 105) really rang a bell with me. Back in 1978 I designed three wildcats I call the 9.5 Alaskans; two were for the 336 Marlin. The 9.5R is made from shortened (2.0 inches) .444 Marlin cases. The other 9.5 is from necked up .308 hulls.

For lead bullets in the Ruger No. 3, I use the 9.5R No. 2, which uses a full-length .444 case necked down.

There was never a more instantaneously dead black bear than one I shot obliquely through the left shoulder, spine and into the right ham with a 260-grain Nosler (a 270-grain flat-point) at something like 100 yards. Velocity was around 2,150 fps in the .336. In the Ruger No. 3, I like the 285-grain Speer Grand Slam at 2,150 fps.

These rounds are really modernized versions of the 9.5 x 57. They are very reliable 200-yard cartridges with either jacketed or cast bullets. I believe they are more effective than either the .356 or .358.

K.A.N., Fairbanks AK

Dangerous Practice!

From *Handloader* No. 108, in "Reader Bylines" on page 8, a reader's letter mentions using a case filler for a .45-70. Mr. K.S. might get away with that in a straight-walled case, but should he try a filler in a bottle-necked case, he is inviting disaster!

In the 50s, that became quite a fad. I know one shooter (better than anyone else) who tried this technique in a 6.5x06 *Imp.* and he is alive to tell about it!

As I remember, there was approximately 15 percent airspace over the powder. That was filled with cornmeal (as an inert, supposedly near weightless material), then the bullet was seated on top. At the time, I was somewhat suspicious of the combination, so I held the rifle overhead and fired it. What happened from this violent explosion was indeed devastating not

only to the rifle, but a piece of shrapnel entered my left wrist where I now wear my watch. I have this piece of steel in my wrist to this day as an unpleasant reminder of following my peers' advice. What would have happened if I had fired this off of my portable benchrest would be anyone's guess.

Let me back up just a little and explain just what happened. The 15 percent airspace was filled with a supposed *near-weightless* material, but this simply was not true! I remember checking through the identical powder density, bullet weight, and the *weight* of the cornmeal which weighed in at 14 grains behind a bullet weight of 140 grains! In essence, this actually means I was pushing 164 grains out the barrel with a powder density good for only 140 grains! Is there any wonder this situation turned critical?

I have warned shooters (many of them) over the years *not* to use heavy materials as filler. Materials such as polyester fiber or even a measured strip of Kleenex tissue

(about one inch wide for 50 percent powder volume or less) has been used with great success in several rifle and pistol calibers. One and one-half grain or even two grains of polyester fiber fill does an excellent job of taking up the existing air volume, and it does the job of keeping the powder against the primer, too.

R.T.S., Oregon City OR

K-Hornet in 1930

Sure enjoy your fine publication, but now and then I find something I disagree with.

In your May-June '83 copy (*Handloader* No. 103) it was stated that the Kilbourn Hornet came about in 1939-1940. I was a friend of Lyle Kilbourn from 1928 and was always interested in his wildcats. In the fall of 1930, he acted as cook in our family hunting camp. During that time I had the opportunity to fire both a single shot and a repeater chambered for his K-Hornet. The repeater was a Winchester 92 he remodeled and chambered for his cartridge. Both guns created a lot of interest among the guests at the camp.

How many others he rechambered I don't know but many of his friends can tell you that quite a few K-models were around in the 1930s.

Keep up the good work.

H.C.M., Liverpool NY ●

For safety sake, trim your cases.

After a few loadings, cases tend to get longer. This could be dangerous if the case were so long that it would pinch the bullet in the end of the chamber. Pressure high enough to damage the gun could result.

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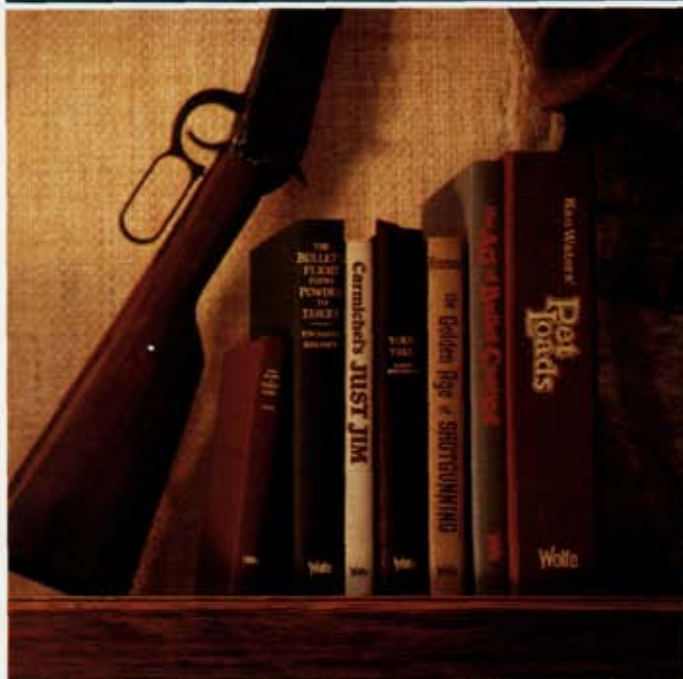
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ANY NEW cartridge generally creates some degree of controversy. This is especially true of new, high velocity hunting rounds where one hunter drops a moose dead in its tracks with a single shot at 600 yards and another takes six shots to kill a whitetail at 30 yards. Initially, disputes are based on opinions and theory. Only much later are they based on experience on targets or game. But I cannot remember such instant and almost violent wrangling as that sparked by the new .357 Maximum.

Initial hype focused on super-velocity and flat trajectory, mainly in respect to handgun silhouette shooting. Suddenly, problems appeared. After a very few months Sturm, Ruger and Company announced a temporary halt in production of the Blackhawk Model SRM — the first, and for a while the only pistol chambered for this round. Then came a chorus of critics condemning the cartridge. All this pontificating took place with nothing more than a cursory look at the round's performance against steel animals

and no testing whatever on live creatures.

What follows will be an objective look at this new cartridge, its *possibilities* as a silhouette and/or hunting round, the guns so far chambered for it, problems encountered to date, causes and cures.

Bob Milek's article on the Maximum in the October 1983 issue of *Guns and Ammo*, concluded that the cartridge possessed some inherent deficiency. The pistol he tested suffered gas-cutting inside the top strap and severe forcing-cone erosion. In addition, excessive amounts of hot gases and flames escaped from the barrel-cylinder gap. In my opinion, his conclusion was unwarranted. Let me explain why.

First, the cartridge: The Maximum differs from the .357 Magnum only in two respects — length of case (1.66 inches as opposed to 1.283 inches respectively) and operating pressure (48,000 psi versus 35,000 to 40,000 psi).

Second, the arms: Ruger's SRM was the first handgun chambered for

the Maximum with something like 10,000 made before production halted. It has been evaluated in print many times. Thompson/Center chambers its Contender for the new cartridge, but since it is a closed-breech single-shot rather than a revolver, and since Contenders always behave differently than revolvers, it has not received the bad press the Ruger did. Because the problems associated with the .357 Maximum have been limited to revolvers, Milek was justified in his limited testing of the Contender. I, too, shall disregard it further.

Finally, Milek tested the Dan Wesson — the first writeup on this new sixgun (new frame, new chambering) of which I am aware. He reasoned that because both the Ruger and Dan Wesson demonstrated the same shortcomings, the cause must lie with the cartridge. Unfortunately, Milek neglected a third revolver chambered for the .357 Maximum. By doing so, he arrived at a false conclusion.

Even though the Ruger and Wesson differ in many respects, they are similar in others. Both, however, are quite different from the third revolver. Announced at the 1982 SHOT Show in Dallas, the Seville Stainless from United Sporting Arms was available in 7½ or 10½-inch barrel lengths. Retailing for \$400, the .357 Maximum is all stainless steel except for hand-fitted walnut grips, the blade of the adjustable rear sight and the orange plastic blade up front.

The grip is the same size and basic



.357

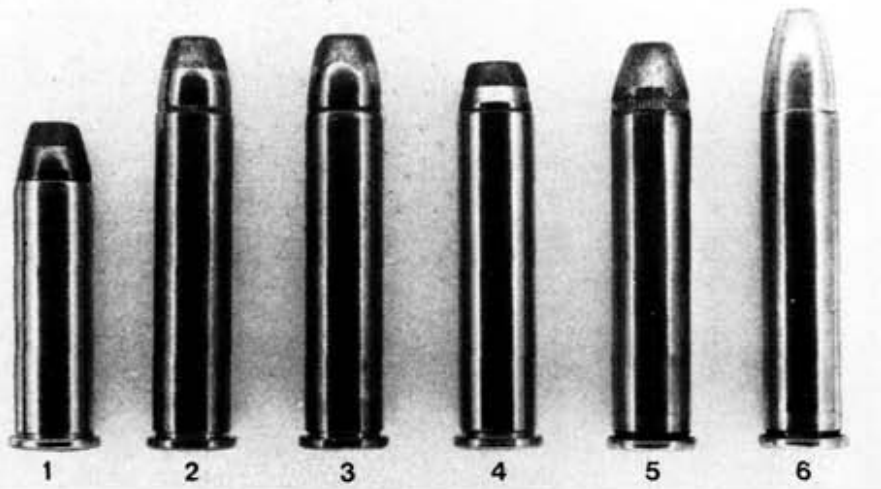
The test pistols: top, a Ruger Model SRM with a 7-1/2-inch barrel; below, United Sporting's Seville with a 4-5/8-inch barrel.

configuration as that of a Ruger SRM (and Super Blackhawk), minus the square-back trigger guard. The cylinder is 1/8 inch longer than the Ruger cylinder, and herein lies one of the reasons why testing this gun might have led Milek to an entirely different conclusion.

At this point, a brief history of the .357 Maximum cartridge is in order. As everyone knows, its development was a joint venture between Ruger and Remington. What is not general knowledge is that all of Ruger's pre-production testing was done with a Remington load which utilized a 158-grain jacketed hollow-point bullet and some type of non-canister powder. Herein lies a major problem: the non-canister powder did *not* produce the flame and spitting which wrought so much havoc in test guns later.

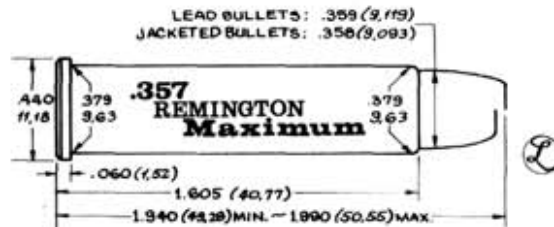
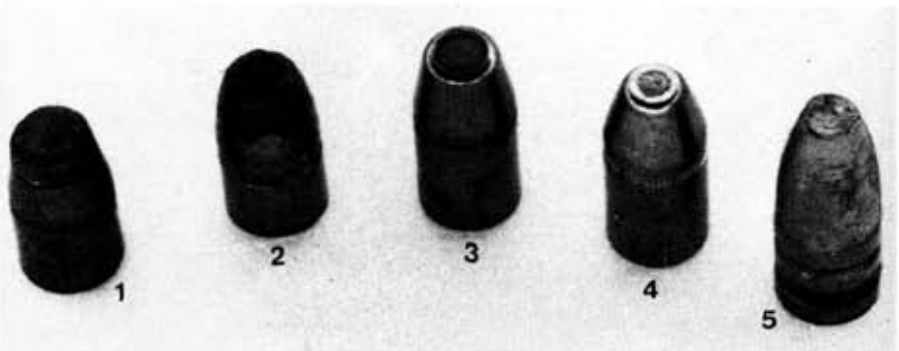
I have fired a very limited amount of this ammo, resting the frame of the Seville on a cloth-covered sandbag (the procedure used for all my handgun testing) and have experienced no undue blast from the barrel-cylinder gap. Contrast this with the day I set fire (read: flame, not smoke) to said rag seven times out of fifty shots with a Ruger SRM using four different powders and the current Remington factory load. (No, there is no excessive cylinder gap on this gun either — .0025 inch.) When Ruger went into production with the SRM, therefore, they had no reason to expect the problem of gas cutting. Neither did they have any way of anticipating forcing cone erosion. While my testing of pre-production

(Text continues on page 38
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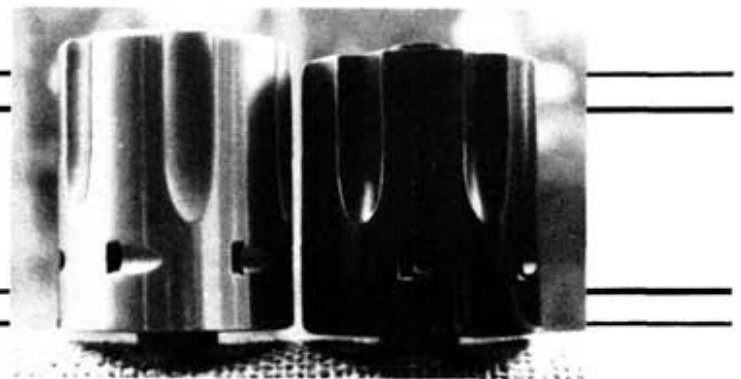
Above, (1) 158-grain .357 Magnum, (2) pre-production 158-grain HP .357 Maximum (note non-scalloped nose), (3) Remington production 158-grain HP Maximum, (4) Federal 180-grain Maximum, (5) handload using 180-grain Hornady JTC, (6) a handload featuring a 190-grain cast bullet (too long to chamber in the Ruger SRM).

Below, some of the test bullets: (1) 158-grain Sierra JSP, (2) 158-grain Remington JHP, (3) 180-grain Sierra Silhouette, (4) 180-grain Hornady JTC-SIL, and (5) 190-grain Saeco design 351.



J. C. Munnell

MAXIMUM



Munnell believes the Seville's longer cylinder, on the left, is one of the reasons that pistol escaped damage from gas cutting. The use of stainless steel was another. Note the shorter Ruger cylinder on the right.

.357 Maximum Loads in Ruger

powder	charge (grains)	bullet	weight (grains)	primer	velocity (fps)	extreme spread (fps)	standard deviation	temperature (degrees F.)	accuracy (inches)	remarks
2400	18.5	Speer FNFMJ ¹	180	CCI 450	1,440	16	9	70	3-7/8	
	19.0				1,475	72	37	70	2	
	19.5				1,474	46	22	70	2-1/8	
	20.0				-----	-----	-----	70	4	
	20.5				1,494	21	8	80	2-1/4	
	21.0				1,546	37	13	70	4	
	21.5				1,586	71	28	65	3-5/8	near max.
IMR-4227	20.5	Speer FNFMJ ¹	180	CCI 450	1,425	109	51	50	3-3/4	
	21.0				1,481	63	24	50	3-1/4	
	21.5				1,513	57	23	50	2-3/4	
	22.0				1,452 (?)	188	84	70	4-1/2	
	22.5				1,537	79	33	70	2-3/4	
	23.0				-----	-----	-----	70	3-1/2	
	23.5				1,569	-----	-----	70	2-1/2	
W-W 296	20.5	Speer FNFMJ ¹	180	CCI 450	1,371	41	17	50	3-1/4	
	21.0				1,404	71	35	50	3	
	21.5				1,406	30	14	50	3-7/8	
	22.0				1,423	45	23	70	4-1/2	
	22.5				1,512	150	58	70	2-1/2	
	23.0				1,543	79	33	70	4-1/4	
	23.5				-----	-----	-----	70	2-1/8	
	24.0				1,640	80	34	70	3-1/4	
24.5	1,580	91	36	65	5	near max.				
H-110	20.5	Speer FNFMJ ¹	180	CCI 450	1,425	189	78	50	3-1/8	
	21.0				1,406	36	16	50	3-3/8	
	21.5				1,410	45	19	50	2-3/4	
	22.0				1,471	34	14	50	2-1/2	
	22.5				1,554	355	111	80	2-1/2	
	23.0				1,537	155	54	80	3	
	23.5				-----	-----	-----	70	3	
	24.0				1,525	83	41	80	5	
24.5	1,615	79	29	80	3-1/8	near max.				
Data No. 9	21.0	Hdy JTCSIL ²	180	CCI 450	1,641	56	22	90	6-7/8	near max.
W-W 296	21.0	Hdy JTCSIL ²	180	CCI 450	1,463	49	20	90	3-1/2	mild

¹ A very heavy crimp must be used with this bullet. If the bullet is allowed to "walk," even to the end of the cannelure, it will jam the gun.

² This bullet fits well in the Ruger cylinder due to the cannelure being farther forward. However, it takes up more powder space than the Speer 180-gr.

.357 Maximum Loads in USA Seville

powder	charge (grains)	bullet	weight (grains)	primer	velocity (fps)	extreme spread (fps)	standard deviation	temperature (degrees F.)	accuracy (inches)	remarks
Data No. 9	20.5	Sierra JSP	158	CCI 450	1,450	34	16	75	5-1/2	
Data No. 9	21.0				1,527	88	36	75	7	
Data No. 9	21.5				1,605	173	72	85	4-1/4	
2400	21.0	Sierra JSP	158	CCI 450	1,555	69	27	75	2-3/8	
2400	21.5				1,570	26	12	75	3	near max.
IMR-4227 ¹	24.0	Sierra JSP	158	CCI 450	1,594	44	19	75	5-1/2	
IMR-4227	24.5				1,604	32	14	85	6-1/4	
IMR-4227	25.0				1,638	33	16	85	5-5/8	near max.
W-W 296	24.5	Sierra JSP	158	CCI 450	1,473	52	21	85	2-5/8	
W-W 296	25.0				1,521	65	25	85	3-3/4	
W-W 296 ²	25.5				1,294	390	177	75	5-3/4	
W-W 296	26.0				1,381	304	141	75	4	
H-110	26.0				Sierra JSP	158	CCI 450	1,565	106	44
H-110	26.5	1,562	30	12				85	6	near max.

powder	charge (grains)	bullet	weight (grains)	primer	velocity (fps)	extreme spread (fps)	standard deviation	temperature (degrees F.)	accuracy (inches)	remarks
Data No. 9	19.0	Hdy JTCSIL	180	Rem 7½	1,023	58	26	90	3-3/4	
Data No. 9	19.5				1,515	83	41	90	4-1/4	
Data No. 9	20.0				1,513	62	30	80	2-1/2	
2400	19.0	Hdy JTCSIL	180	Rem 7½	1,448	49	20	90	3-1/4	
2400	19.5				1,467	102	47	90	3	
2400	20.0			CCI 450	1,521	16	7	85	5-1/2	
IMR-4227	22.0	Hdy JTCSIL	180	Rem 7½	1,148	46	19	90	3-3/8	
IMR-4227 ³	22.5				1,198	90	40	90	5	
W-W 296	22.5	Hdy JTCSIL	180	Rem 7½	1,534	74	33	90	3-3/8	
W-W 296	23.0				1,593	34	15	90	3-1/8	
W-W 296	23.5			CCI 450	1,622	42	16	80	4	
H-110	22.5	Hdy JTCSIL	180	Rem 7½	1,104	5	3	90	4	
H-110	23.0				1,150	61	29	90	4-3/8	
H-110	23.5			CCI 450	1,554	45	19	85	2-3/4	
W-W 680	23.5	Hdy JTCSIL	180	CCI 450	----	----	----	90	3-1/4	
W-W 680	24.0				1,506	17	8	90	4	
W-W 680	24.5				1,570	93	48	90	4-1/2	
Data No. 9 ⁴	19.5	Sierra FPJ	180	CCI 450	1,444	82	36	80	2-5/8	
Data No. 9	20.0				1,477	55	26	80	1-1/2	
2400	20.0	Sierra FPJ	180	CCI 450	1,489	35	12	80	3	
2400	20.5				1,530	18	8	80	3-7/8	
IMR-4227	22.5	Sierra FPJ	180	CCI 450	1,520	34	13	80	5	
IMR-4227	23.0				1,563	44	21	80	5	
W-W 296	23.0	Sierra FPJ	180	CCI 450	1,480	61	30	80	2	
W-W 296	23.5				1,520	77	31	80	1-1/2	
H-110	24.0	Sierra FPJ	180	CCI 450	1,503	77	30	80	3-1/8	
H-110	24.5				1,550	58	22	80	3	
W-W 680	24.5	Sierra FPJ	180	CCI 450	1,497	83	35	80	2	
W-W 680	25.0				1,507	66	23	80	4-1/4	
Data No. 9 ⁵	19.0	Cast FN	190	CCI 450	1,603	65	27	80	4-3/8	
Data No. 9	19.5				1,570	78	31	80	3-1/8	
Data No. 9	20.0				1,584	93	41	85	3-7/8	
Data No. 9	20.5				1,590	44	19	75	4-1/2	
Data No. 9	21.0				1,622	93	34	75	2-3/4	
2400	20.0	Cast FN	190	CCI 450	1,562	85	37	85	3	
2400	20.5				1,554	42	19	85	1-7/8	
2400	21.0				1,609	25	10	85	5-1/2	
2400	21.5				1,669	107	40	75	4	near max.
IMR-4227	22.0	Cast FN	190	CCI 450	1,570	21	9	80	3-7/8	
IMR-4227	22.5				1,573	29	12	80	4-3/8	
IMR-4227	23.0				1,604	45	18	85	3-3/4	
IMR-4227	23.5				1,644	54	27	85	5-3/4	
IMR-4227	24.0				1,664	65	25	80	3	
W-W 296	22.5	Cast FN	190	CCI 450	1,537	56	21	80	3	
W-W 296	23.0				1,579	46	22	80	4-3/4	
W-W 296	23.5				1,543	57	22	85	2-1/8	
W-W 296	24.0				1,637	71	27	80	3-1/8	
H-110	23.5	Cast FN	190	CCI 450	1,549	43	21	80	2-7/8	
H-110	24.0				1,566	28	12	80	5-3/4	
H-110	24.5				1,544	41	18	85	2	
H-110	25.0				1,576	14	6	85	3-3/4	
H-110	25.5				1,678	101	44	80	3	
W-W 680	25.5	Cast FN	190	CCI 450	1,518	43	24	90	4-3/4	
W-W 680	26.0				1,579	29	15	90	3-1/4	
W-W 680	26.5				1,588	19	10	90	4-1/2	

¹ All 4227 loads were compressed, 24.0 grs is maximum with 180 & 190-gr. bullets.

² Because of the erratic velocity readings, no further testing was done with W-W 296 and this bullet.

³ Note the extreme variation in velocities with some powders between Rem 7½ and CCI 450 primers.

⁴ Only a limited number of these preproduction bullets were available.

⁵ This is the Saeco No. 351 flatbase mould, nominally 200-gr. When cast from linotype, they weigh 190-gr. unsized and unlubricated. Crimp over last driving band. No leading was experienced with any of the loads tested.

Remington ammo is limited, I have been told prototype SRMs fired thousands of rounds of this ammo and never suffered any problems.

The relatively light 158-grain bullet is quite likely a major contributor to the problem. That bullet simply does not have sufficient mass to contain the powder within the case or within the cylinder while burning at peak heat and pressure. (While testing my Seville, I noticed *smudging* on the top strap with 158-grain bullets. With 180-grain or heavier bullets, there was no smudging at all. No cutting of the top strap has been observed at all in that pistol.

More powder is used with lighter bullets, consequently, more flame is generated. In the two guns I tested so far — a Ruger SRM and a Seville — I could get no higher velocity from 158-grain bullets than I did with 180-grain, and obtained still higher velocities at safe pressures with the 190-grain cast bullet. This indicates the inefficiency of the lighter bullets. Interestingly, Federal saw fit to come out with a 180-grain factory load, but by the time this ammunition had been fired in various test guns, Milek's included, the 158-grain ammo had already done its damage.

While experiencing the same problems with my Ruger SRM as did Milek, I experienced *none* at all with the Seville. This has led me to believe there are several contributing factors to the problems experienced with Ruger's and Dan Wesson's which were precluded by the USA design.

The employment of heavier bullets has already been mentioned and can eliminate many of the troubles experienced by Milek. Peak pressures and high temperatures are contained within the cartridge case longer by heavier bullets. The consequently reduced powder charges also help lessen the Maximum's tendency to spit flame and hot gases out the cylinder mouths.

While heavy bullets help reduce the amount of gas escaping between

barrel and cylinder and holding pressures down, heavier bullets still allowed enough gas to get away and set fire to the sandbag cover while testing the Ruger. I experienced none of this, with even the hottest loads (some of them too hot!), in the USA handgun. The stretched-out cylinder of the Seville contains the burning gases longer which, in turn, helps eliminate cutting the top strap and eroding the forcing cone.

A factory (158-grain) .357 Mag. round is 1.590 inches long and the cylinder of a new model Blackhawk in this chambering is 1.646 inches long. A factory .357 Maximum round (158-grain) is 1.975 inches long, while the SRM cylinder is 1.939 inches long. Deduct the rim thickness (neither gun has a counter-bored cylinder) and the Maximum cylinder is *shorter* in proportion to the length of its loaded cartridge than a .357 Magnum — 62 percent of cylinder length for the Magnum round and a whopping 99 percent of the cylinder length for the Maximum round.

Contrast this with a cylinder length of 2.0695 inches for the USA Maximum. That is why no such problems are encountered in the .357 Magnum even though some handloads often exceed 50,000 psi. The Seville, with a 1/8-inch longer cylinder, contains the burning gases until pressures and temperatures have peaked. Gas escaping through the cylinder gap and reaching the top strap and forcing cone are, therefore, cooler and under less pressure.

As an experiment, I cut ten cases 1/8 inch short and fired them in the Ruger SRM using appropriately reduced but hot handloads. While such firings were too limited to guarantee that shorter case solved the problem (top-strap cutting and forcing-cone erosion had already taken place), no undue spitting was noted between the barrel and cylinder.

The cylinder of the Dan Wesson is the same length as that of the Seville, yet Milek experienced gas-cutting and erosion in the Wesson too. It appears that although a longer cylinder would be a plus, it is not the total solution.

It is highly probable that United Sporting Arms' use of 17.4 Ph stainless steel is the reason for cutting and erosion have not plagued their guns. Since I have no formal background in metallurgy, chemistry or physics, I will not offer any hypothesis to *why* this may be, but on the basis of my testing, this stance appears valid. Probably the heat treatment of the

USA guns accounts, at least in part, for their resistance to the ravages of heat and pressure. From what I know of heat treating, I suspect it is not as important as the composition of the metal itself. A test of a Dan Wesson stainless model would be interesting indeed.

When studying the loading charts, the following should be kept in mind: all velocities were averages of five-shot groups, measured by an Oehler M33, taken 15 feet from the muzzle. Accuracy figures are for five-shot, 50-yard groups. If the accuracy of the USA gun does not particularly impress you, keep in mind it had a 4-5/8-inch barrel.

Federal/IHMSA brass was used throughout. Some weak case mouths were noted during the 13th loading of the first box of shells; on the 15th loading a few mouths split and the brass was discarded. Be very careful when changing components — Remington brass is slightly heavier. Remington 7½ primers produced *substantially* less velocity with some powders than did CCI 450 primers.

The loads show I did not baby the Seville. Actually, I used some far heavier loads, which I cannot repeat here; still no problem of gas cutting or erosion was noted. Regardless, I would advise anyone to start at least two grains below the lowest load listed and work up a tenth of a grain at a time. The Ruger digested heavier loads but recorded no greater velocities than the Seville.

My first reaction to the cartridge when it was announced was that it was an answer to a question no one had asked. Who needs another round which barely equals the .44 Magnum? This prejudice was reinforced when I discovered that published velocities were definitely not taken from a revolver. However, with proper handloads, muzzle energies in the 1,200 to 1,250 foot-pound class can be achieved even with a 4-5/8-inch barrel. Contrary to (mostly old) published data, there just ain't no .44 Mag. revolver in the world which will do that. Couple this with the flatter trajectory and better penetrating abilities of the longer, heavier .357 inch bullet and you have a definite winner.

I am confident that companies with the abilities and reputations of Ruger and Dan Wesson will modify their guns and eliminate the problems.

The use of 180-grain or heavier bullets, a longer cylinder, and stainless steel can make this cartridge one of the best choices for hunting and silhouette shooting. ●

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