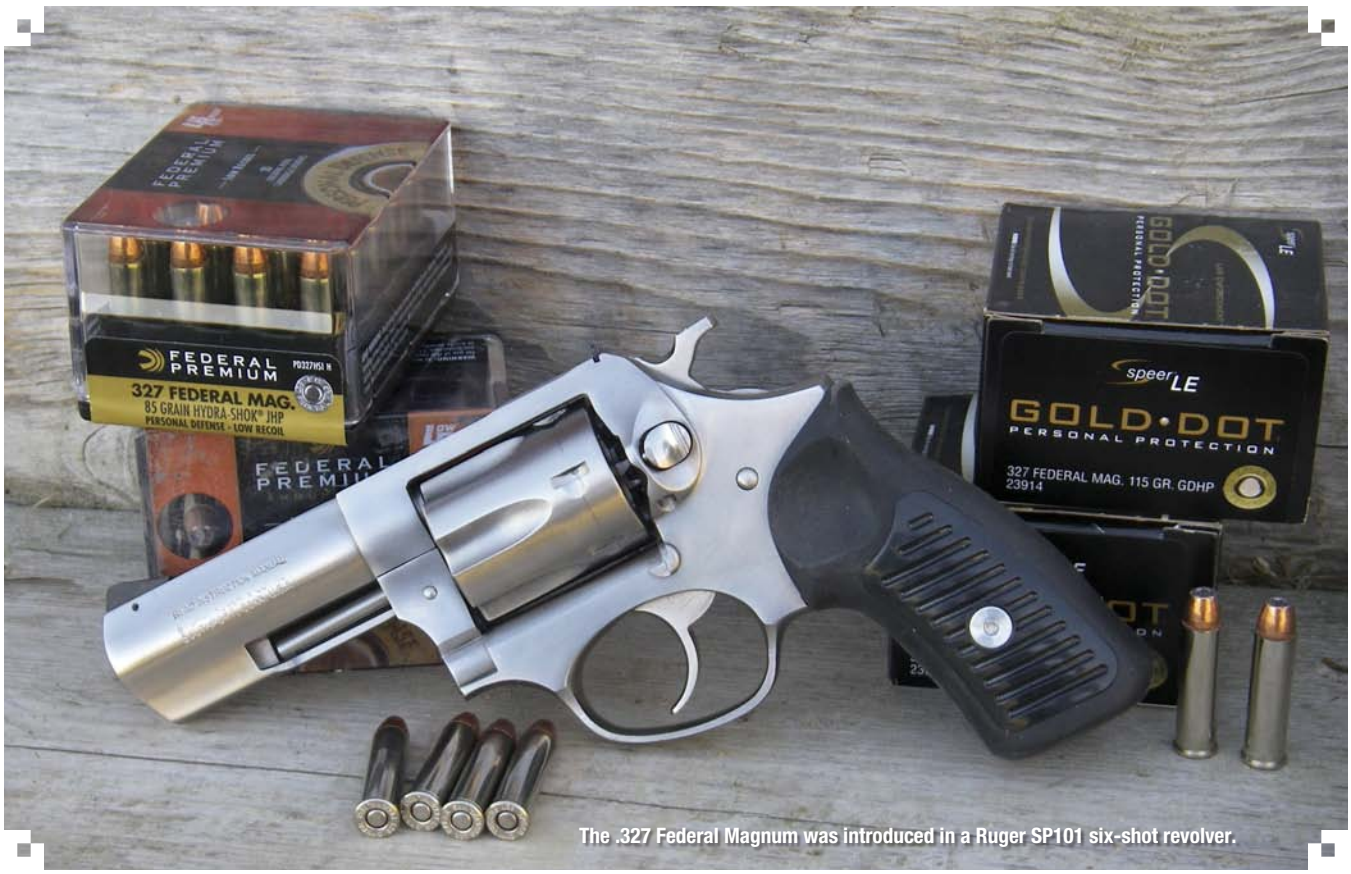
Load Development



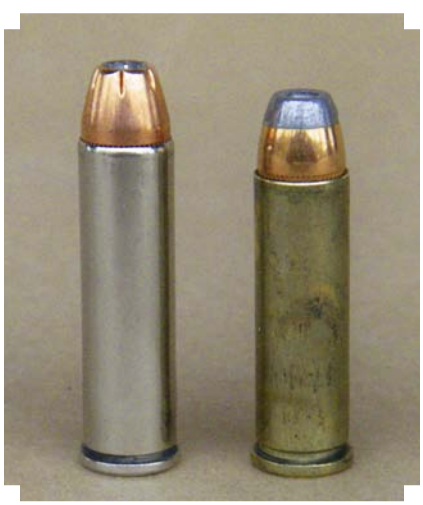
The .327 Federal Magnum was introduced in a Ruger SP101 six-shot revolver.

Brian Pearce

Federal Cartridge has teamed with Sturm, Ruger & Company to introduce a completely modern .32-caliber cartridge known as the .327 Federal Magnum. It is essentially a lengthened version of the .32 H&R Magnum cartridge with a case length of 1.200 inches, but it's loaded to significantly greater pressures of 45,000 psi. In spite of its name, it utilizes the same .312-inch bullets as other .32-caliber cartridges, including the .32 S&W Long, .32 H&R Magnum and .32 WCF (aka .32-20).

The .327 Federal Magnum offers substantial performance and is advertised to drive a 100-grain jacketed bullet 1,400 fps and a Speer 115-grain Gold Dot hollowpoint 1,300 fps; a Federal "Low Recoil" load pushes an 85-grain Hydra-Shok 1,330 fps. These velocities are advertised from a Ruger SP101 revolver with a 3 1/16-inch barrel. For the record, those speeds are realistic, as the test revolver used herein produced greater velocities than factory claims.

The Ruger SP101 is a small-frame, double-action revolver, and when chambered in .327 Federal Magnum, it features six shots rather than five when the same gun is chambered in .38 Special or .357 Magnum. This is a stout and un-


The .327 Federal Magnum (left) is essentially a lengthened .32 H&R Magnum (right) but loaded to significantly greater pressures.

Handloading the .327 Federal Magnum

Brian used a variety of cast bullets to develop load data.

Jacketed bullets of .312 inch diameter were used to develop .327 Federal Magnum data.

usually durable gun that tips the scales at 28 ounces. Clearly the folks at Federal and Ruger see this gun and cartridge as having potential in the personal protection and law enforcement market. I would rather see it offered in a medium-framed (.357 Magnum 50th Anniversary pattern) Blackhawk or perhaps a Smith & Wesson K-Frame, which would make excellent field outfits for hunting small to medium game. With 6- to 7½-inch barrels, velocities would easily exceed 1,500 fps. (When this was written, there were rumors that such guns may be forthcoming in the not-too-distant future.)

Handloading the .327 Federal Magnum

For handloading the .327 Federal Magnum, RCBS .32 S&W Long/.32 H&R Magnum carbide dies were used, which worked flawlessly.

One concern that has been expressed with handloading the .327 is jacketed bullets that are not up to the 45,000 psi this cartridge generates. For instance, some bullets may not have a thick enough jacket, or alloyed lead core, which can result in poor accuracy, jacket or core separation, erratic pressures and premature forcing cone and barrel wear. With that said, none of the loads in the accompanying tables indicated the problem existed with the jacketed bullets used herein. (I did push some bullets to greater speeds and pressures than those listed, and there were some indications that all was not well. Therefore it is suggested to limit powder charges to those listed.)

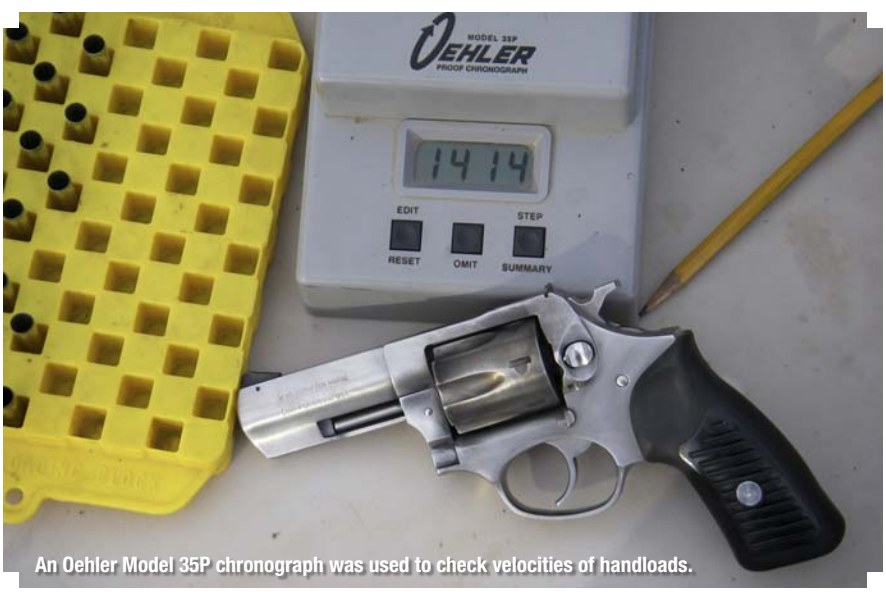
Case length for the .327 Federal Magnum is 1.200 inches.

Table I

.327 Federal Magnum Factory Load Performance

bullet (*grains*)	advertised velocity (*fps*)	actual velocity (*fps*)
85 Federal Hydra-Shok (Low Recoil)	1,330	1,386
100 Federal American Eagle JSP	1,400	n/a
115 Speer LE Gold Dot HP	1,300	1,341

Notes: A Ruger SP101 with a 3⅛-inch barrel used to test fire loads.



An Oehler Model 35P chronograph was used to check velocities of handloads.

Table II

.327 Federal Magnum Data

bullet (grains)	powder	charge (grains)	primer	case	velocity (fps)	OAL (inches)	comments
78 Oregon Trail cast roundnose	Universal Clays	4.0	CCI 500	Federal	820	1.4570	
		4.5			901		
	W-231	4.0			840*		
		4.5			944		
	TiteGroup	4.0			1,091		
	Unique	4.0			902		
		4.5			980		
	Bullseye	4.0			1,055		
83 Lyman 313249 (Linotype)	Universal Clays	5.0			1,024	1.4570	
		6.0			1,355		
	W-231	5.0			1,069		
		6.0			1,358		
	TiteGroup	4.5			1,211		
		6.0			1,501		
	Unique	5.0			1,035*		
		6.0			1,279		
	Bullseye	4.5			1,132		
		5.0			1,238		
85 Hornady XTP-HP	HS-6	7.0	CCI 550		1,143	1.4475	
		8.0			1,235		
		8.8			1,360		
	Universal Clays	5.5			1,246		
		6.0			1,310		
		6.5			1,373		
	W-231	5.3		Speer	1,137		
		5.8			1,202*		
		6.3			1,296		
	AA-9	11.0			1,300		
		11.5			1,341		
		12.0			1,376		
		12.5			1,443*		
	2400	11.0			1,290		
		11.5			1,306		
		12.0			1,344		
		12.5			1,411		
90 Sierra JHC	Longshot	6.0			1,103	1.4670	
		6.5			1,150		
		7.0			1,221		
		7.5			1,299		
	HS-6	8.0			1,223		
		8.5			1,290		
		9.0			1,361		
	H-110	12.0		Federal	1,203		
		13.0			1,261		
		14.0			1,338*		
	Enforcer	10.0			1,068		
		11.0			1,196		
		12.0			1,306		
95 Cast Performance Keith-style	Universal Clays	4.3	CCI 500		968	1.4355	
		5.0			1,018		
		5.5			1,242		
	Unique	4.0			891		
		5.0			1,110		
		5.5			1,244		
	W-231	4.0			970*		
		4.5			1,047		
		5.0			1,139		
		5.5			1,235		

(Continued on next page)

Table II

.327 Federal Magnum Data

(Continued from previous page)

bullet (grains)	powder	charge (grains)	primer	case	velocity (fps)	OAL (inches)	comments
97 NEI cast Keith SWC	TiteGroup	3.5	CCI 500	Federal	982*	1.4475	
		4.0			1,066		
		4.5			1,183		
		5.0			1,274		
	Red Dot	4.0			1,104		
		4.5			1,203		
		5.0			1,283		
	2400	10.0	CCI 550		1,229		
		11.0			1,295		
		11.5			1,310		
	H-110	11.5			1,274		
		12.5			1,331		
		13.5			1,391		
98 Speer hollow-base WC	W-231	2.5	CCI 500		632	1.3100	don't reduce
		3.0			701		
	TiteGroup	2.2			666		don't reduce
		2.5			759*		
	Red Dot	2.0			608		don't reduce
		2.5			720*		
		3.0			881		
100 Hornady XTP-HP	AA-9	10.0	CCI 550	Speer	1,216	1.4545	
		11.0			1,290		
		11.5			1,324		
	2400	10.0			1,176		
		11.0			1,220		
		11.5			1,229		
	Enforcer	10.0			1,155		
		11.0			1,285		
		11.5			1,342*		
	VV-N110	10.5			1,177		
		11.0			1,221		
		11.5			1,238		
	Lil'Gun	12.5			1,196		
		13.5			1,233		
		14.0			1,249		
	H-110	12.0			1,284		
		13.2			1,326*		
100 Speer JHP	AA-9	10.0			1,162	1.4575	
		11.0			1,233		
		11.5			1,294*		
	VV-N110	10.0			1,126		
		11.0			1,131		
		12.0			1,199		
	W-296	12.0			1,197		
		13.2			1,287		
	Power Pistol	6.5			1,245		
		7.0			1,301		
		7.5			1,388*		
115 Speer Gold Dot HP	H-110	11.5			1,171	1.4570	
		12.0			1,204		
		12.5			1,263*		
115 Oregon Trail Cast FP	Universal Clays	4.0	CCI 500	Federal	993	1.4680	
		4.5			1,070		
		5.0			1,211		
	Red Dot	3.5			974*		
		4.0			1,021		
		4.5			1,147		
	Unique	4.0			948*		
		4.5			1,000		
		5.0			1,147		

(Continued on next page)

Table II

.327 Federal Magnum Data

(Continued from previous page)

bullet (*grains*)	powder	charge (*grains*)	primer	case	velocity (*fps*)	OAL (*inches*)	comments
116 Lyman 311008	W-231	3.5	CCI 500	Federal	872*	1.5100	
		4.5			1,077		
		5.0			1,159		
116 Lyman 311316 cast gas check	Power Pistol	7.0			1,254*		
	H-110	12.0			1,299*		
118 Cast Performance FP	2400	8.0			1,055*	1.4820	
		9.0	CCI 550		1,164		
		10.0			1,222		
		10.5			1,278		
	AA-9	9.0			1,209		
		10.0			1,308		
		10.5			1,331		
	Power Pistol	6.0			1,212*		
		6.5			1,229		
		7.0			1,266		

Notes: Firearm used was a Ruger SP101 with a 3⅛-inch barrel. Federal Cartridge and Speer cases used as noted. Maximum case length: 1.200 inches.

* Load gave notable accuracy for a given bullet. See text for more details.

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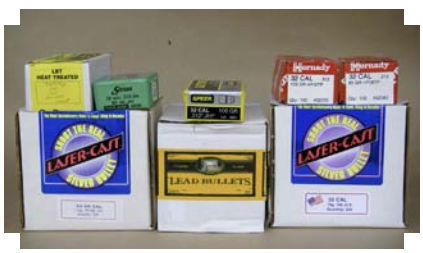
There were many powders that worked well in the .327 Federal Magnum, giving respectable velocities and accuracy. Loads marked with an asterisk (*) gave notable performance in terms of accuracy for a given bullet, and in some instances accuracy of two powders were more or less identical and explains why more than one powder is occasionally highlighted. For instance, using the 85-grain Hornady XTP-HP, 12.5 grains of Accurate Arms No. 9 produced 1,443 fps and groups hovered around 2 inches at 25 yards, but 5.8 grains of Winchester 231 (1,202 fps) gave equal accuracy, so both are highlighted with an asterisk. With that said, there were many loads that gave excellent overall results, even if they were not noted, which is an indication that developing quality handloads for this little cartridge is easy.



Brian used a variety of commercial and hand-cast bullets in the .327 Federal Magnum.

Table III

.327 Federal Magnum Data

bullet (*grains*)	powder	charge (*grains*)	primer	velocity (*fps*)	extreme spread (*fps*)
100 Speer JHP	AA-9	11.5	CCI 550	1,310	94
		11.5	CCI 500	1,310	77
		11.5	Federal 100	1,302	56
	2400	11.5	CCI 550	1,195	88
		11.5	CCI 500	1,190	34
		11.5	Federal 100	1,201	26
	Enforcer	11.5	CCI 550	1,284	62
		11.5	CCI 500	1,256	30
		11.5	Federal 100	1,266	33
	VV-N110	11.5	CCI 550	1,195	36
		11.5	CCI 500	1,157	43
		11.5	Federal 100	1,144	51
	Lil'Gun	14.0	CCI 550	1,110	86
		14.0	CCI 500	1,242	60
		14.0	Federal 100	1,254	54
	H-110	13.2	CCI 550	1,242	64
		13.2	CCI 500	1,229	40
		13.2	Federal 100	1,215	46
	Power Pistol	7.5	CCI 550	1,310	60
		7.5	CCI 500	1,331	29
		7.5	Federal 100	1,329	32

Notes: A Ruger SP101 with a 3⅛-inch barrel used to fire all loads. Federal Cartridge cases used throughout. Maximum case length: 1.200 inches.

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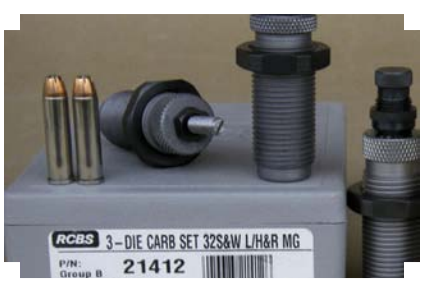
One challenge that plagued this particular project was barrel leading when used with swaged and cast bullets. Some revolvers are simply more prone to barrel leading than others, and the Ruger SP101 used herein began to lead when bullets were pushed between 900 to 1,100 fps. Having successfully used many of these same cast bullets in the .32 H&R Magnum and .32-20 WCF



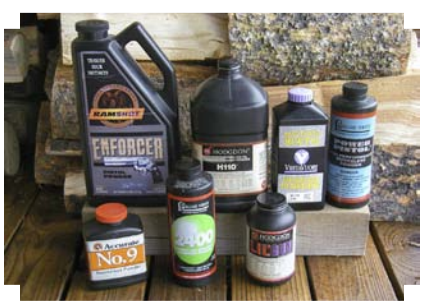
RCBS .32 S&W Long and .32 H&R Magnum carbide dies were used to handload the .327 Federal Magnum.

Accuracy of the Ruger SP101 was respectable.

loads in rifles and a variety of sixguns that reach similar velocities, I don't believe the problem is related to the cartridge but rather this particular gun.

A gas check largely cured the leading issues, as 116-grain bullets from Lyman mould 311316 were accurate and produced little leading when driven around 1,250 to 1,300 fps using 7.0 grains of Alliant Power Pistol or 12.0 grains of Hodgdon H-110.

As a shooter and hunter, I enjoy experimenting and fine-tuning handloads, and being fond of the .327 Federal Magnum (and am in the process of building a fine field sixgun), I wanted to do some additional experimenting. Specifically, primer choice is critical when dealing with relatively small powder charges. In Table III, there are loads that are of identical components, except the primers, which consist of CCI 500, CCI 550 and Federal 100. Powders included Accurate Arms No. 9, Alliant 2400 and Power Pistol, Western Powders Enforcer, Vihtavuori N110 and Hodgdon H-110 and Lil'Gun.



These powders were the best choices for high-velocity loads.

Each of the above powders gave lower extreme spreads with the standard primers (CCI 500 and Federal 100), with the exception being Vihtavuori N110. In many instances it was significant and accuracy was noticeably improved. For instance 11.5 grains of 2400 drove the 100-grain Speer JHP 1,195 fps and the extreme spread was 88 fps (for a five-shot string). Using an identical powder charge, case and bullet but switching to a CCI 500 primer, velocity was 1,190 fps and the extreme spread dropped to 34 fps. For the same load but capped with a Federal 100 primer, velocity was 1,201 fps and the extreme spread was just 26 fps. With each of the powders used in this test, standard primers gave noticeably less muzzle blast.

In my continued experimenting, another interesting item was observed. The standard primers were certainly showing less chamber pressures, and it was decided to increase the powder charges to see if velocities could be improved, but in several instances velocities actually ***decreased!*** For instance, using the 100-grain Speer JHP, 11.5 grains of Accurate Arms No. 9 produced 1,310 fps, while 12.0 grains dropped to 1,297 fps. Other powders that produced less velocity with a .5-grain charge increase included Western Powders Enforcer, Hodgdon Lil'Gun and H-110. (Table IV has been included so the reader can study those results.) Using a sixgun with a longer barrel will likely produce greater velocities with the heavier powder charges. And the above results are not exclusive to the .327 Federal Magnum cartridge, as I have observed similar results with other straight-walled sixgun cartridges.

The .327 Federal Magnum is accurate and promises to make a great field cartridge for hunting appropriate game. ●

Table IV **Additional .327 Federal Magnum Data**
Increased powder charges can actually reduce velocity.

bullet (*grains*)	powder	charge (*grains*)	velocity (*fps*)	extreme spread (*fps*)	comments
100 Speer JHP	AA-9	11.5	1,310	77	
		12.0	1,297	51	reduced fps
	2400	11.5	1,190	34	
		12.0	1,222	91	
	Enforcer	11.5	1,256	30	
		12.0	1,245	61	reduced fps
	VV-N110	11.5	1,157	43	
		12.0	1,171	59	
	Lil'Gun	14.0	1,242	60	
		14.5	1,225	58	reduced fps
	H-110	13.2	1,229	40	
		13.7	1,219	74	reduced fps
	Power Pistol	7.5	1,331	29	
		7.8	1,339	40	

Notes: A 3⅛-inch barreled Ruger SP101 used to test fire all loads. Federal Cartridge cases and CCI 500 primers used throughout. Maximum case length: 1.200 inches.

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