



ON THE COVER: During World War II the German Army employed a wide variety of novel efficient firearms. For a rundown of this fascinating weaponry turn to page 50 Cover photography by Pat



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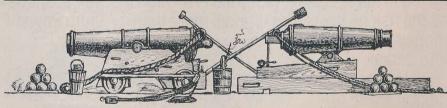






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■ If we were to typify the modern biggame rifle I think most of us would nominate a bolt action topped with a 3-9X variable and chambered for some potent, flat-shooting cartridge of .27, .28 or .30 caliber. There was a time though, when the typical American hunting rifle was a lever action; in fact, for half a century, say 1870 to 1920, the lever gun reigned supreme. It was only

just an educated guess, I'd say that the other action types—pump, semi-auto and single-shots combined—don't come close to the number of lever guns sold. And from what I can see, this supposedly antiquated design is in the throes of a resurgence.

America's love affair with the "gun that won the West" continues not so much out of sentimentality—though that does enter into it to some extent—but because for many hunting applications it is still as efficient a game-getter as it was for our dads and granddads. After all, in the East especially, the vast majority of whitetails and black bears are still taken at ranges under 100 yards... well under. So why shouldn't the lever gun be as good as it's always been? Truth is, it's not as good but better.

Browning's BLR differs from most lever actions with its detachable magazine and rack-and-pinion system.

after our doughboys returned from *Over There* that any significant interest was shown in the turnbolt.

It's not hard to imagine how impressed boys who were weaned on old trapdoor Springfields, rolling blocks, Martinis, and various black and smokeless powder guns must have been when they got their hands on an '03 Springfield or '17 Enfield chambered in .30-06 caliber. It was the service experience, then, of a couple million GIs that opened the way for the acceptance of the bolt action. But it was hardly a sweeping revolution or one that happened overnight; the lever gun remained the preferred rifle type with America's deer hunter during the '30s and '40s as well. It really

THE RESURGENCE OF THE LEGISLATION OF THE LEGISLATIO

Technical advancements and the introduction of potent new hunting calibers have made America's traditional lever gun more powerful and versatile than ever.

By Jon Sundra

wasn't until the mid-'50s that the turnbolt began to assert itself.

Today the bolt gun holds sway but not to the extent one might think. One has only to walk into any gun shop and give the racks a quick once-over to see that the lever-action rifle is alive and well. Indeed, lever guns are still popular enough in the eastern half of the country that they account for a major chunk of sales for Marlin, Winchester, Savage, Browning and Mossberg, as well as for several European manufacturers who export replicas here. Though

One of Sundra's favorite hunting rifles is the Marlin Model 336, chambered in .375 Winchester and topped with a Leupold 1.5-5X scope.

In recent years we've seen new calibers introduced—the .444 Marlin, .375 Winchester, .307 and .356 Winchester to name four—which make the traditional lever gun more powerful and more versatile than ever. Before looking at these latest developments, let's first make an important distinction between what I call—for lack of better terminology—the "traditional" as opposed to "contemporary" lever action.

The traditional lever gun is typified by the Winchester 94 and Marlin 336, i.e., narrow, slab-sided receivers in which the bolt travels over and thus cocks an exposed hammer as the underlever is cycled. Both utilize a forward extension of the lever in direct, simple linkage with the bolt to reciprocate same. Lock-up is achieved when the upstroke of the lever cams a verticalmoving locking bolt into a recess at the rear of the breechbolt, as in the Marlin, or directly behind the bolt, as in the Winchester. Rapid repeat-shot capability comes from an under-barrel tubular magazine which precludes the use of spitzer or even semi-pointed bullets.

Until recently these guns were limited to moderate pressure levels of under 40,000 CUPs (copper units of pressure), which was perfectly okay for the .30-30, .35 Remington, .32 Special and similar rounds for which they were traditionally chambered. However, Winchester's announcement in 1978 of the .375 cartridge and a revamped



The Marlin Model 336 is available in a wide range of calibers, including (left to right): .30-30, .35 Rem., .307 Win., .356 Win., .375 Win., .444 Marlin and .45-70.



Sundra took this large cougar in heavy timber with his flat-shooting .375-chambered Marlin Model 336.



Shooting his .444 Marlin from 50 yards, Sundra found the rifle to be capable of excellent accuracy.



These aperture sights by Williams are a fine choice for a big-bore lever-action like the Marlin .444.

NEW LEVER GUN HANDLOAD BALLISTICS							
CALIBER <sup>*</sup>	BULLET WEIGHT (GRAINS)	MUZZLE VELOCITY (24-INCH BARREL) (FPS)	MUZZLE ENERGY (FP)	VELOCITY AT 200 YARDS (FPS)	ENERGY AT 200 YARDS (FP)		
.307	150	2,765	2,545	1,930	1,240		
.307	170	2,505	2,510	1,870	1,400		
.356	200	2,455	2,675	1,795	1,430		
.356	250	2,160	2,595	1,425	1,575		

	OLD LEVER GUN HANDLOAD BALLISTICS					
CALIBER	BULLET WEIGHT (GRAINS)	MUZZLE VELOCITY (24-INCH BARREL) (FPS)	MUZZLE ENERGY (FP)	VELOCITY AT 200 YARDS (FPS)	ENERGY AT 200 YARDS (FP)	
.30-30	170	2,200	1,825	1,620	990	
.35 Rem.	200	2,020	1,812	1,335	791	

version of the Model 94 called the Big Bore, was the start of that resurgence I alluded to earlier. By leaving more metal in the locking bolt area at the rear of the receiver and using tougher steels throughout, the 84-year-old rifle was suddenly capable of handling a new cartridge factory-loaded to a working pressure of 52,000 CUPs, the same limit as used for modern rimless numbers like the .243 and .308 calibers.

Winchester claimed a ten-percent increase in overall range and effectiveness for the .375 Big Bore over the .30-30, the regular Model 94's perennial chambering. Those claims may even have been a tad conservative but, be that as it may, the reception given the Big Bore 94 had to be

# **LEVER GUN**

disappointing for Winchester. Perhaps it was a matter of a jaded public and media, both who just couldn't get excited about a cartridge that offered ballistics seemingly out of the 1920s... and in a rifle you still couldn't mount a scope sight on in any acceptable fashion.

In retrospect, the .375 was a transitional cartridge as I see it, but an extremely important one as it paved the way for the new Angle Eject 94 and the .307 and .356 cartridges soon to come.

the .444 was a significant development in that the established maximum for factory ammo was set at 47,000 CUPs. This rather potent round required some metallurgical upgrading of the 336 but otherwise no outward changes other than a heavier barrel of 4140 steel and a slightly enlarged ejection port. The big .444's 240-grain slug churned up nigh-on 3,000 foot pounds of energy, making it more than a mere deer/bear cartridge.

Several years later when interest in the century-old .45-70 was revived, Marlin was easily able to adapt the 336 to this ultimate "brush buster." Ditto when the .375 Win-

chester was sprung a few years later.

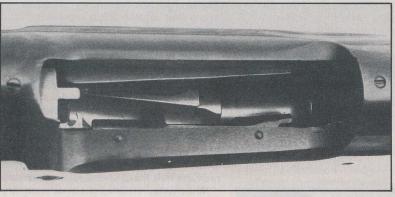
During the '60s and '70s, then, there were some significant technical advancements made by Marlin and Winchester. Nevertheless, though both guns entered the 1980s with the new-found capability of handling cartridges generating over 50,000 CUPs, by virtue of caliber choice neither could claim to be anything but what they'd always been, guns well-suited to brush hunting at close to moderate range. After all, looking at the cartridge lineup for both we find the .30-30, .35 Remington, .375 Winchester, .444 Marlin and .45-70, hardly long-range calibers. Then came 1983 and



Anyway, within weeks after Winchester's unveiling of the .375, the Marlin folks announced they too would chamber for the .375 in their flagship gun, the 336. A number of years prior, however—14 to be exact—Marlin made a significant effort of their own to woo lever lovers with its big .444. Though fitting right in with the popular image of a traditional lever action brush cartridge—kinda' big and slow-moving—

A relatively new development for the famous Savage Model 99 is its detachable magazine, but even with its old rotary spool design it was capable of handling rimless, high intensity cartridges and spitzer bullets, unlike most lever actions.





Because of its rotary spool magazine (above) and the ability to accommodate almost any smokeless round that would fit through its action, the original Savage Model 99 has never been restricted to the lower pressure cartridges and round nose bullets that are normally associated with the traditional lever gun. This fine rifle is capable of taking deer, antelope, bear or anything appropriate for the same chambering in a bolt action.



The defunct Sako
Finnwolf was one of a
few lever actions with a
rack-and-pinion design, a system
that shortens lever throw.

Winchester's announcement of the .307 and .356, new wrinkles which may well change our ultimate perception of the traditional lever action rifle.

But let me now digress for a moment and pick up on those "contemporary" lever guns alluded to earlier. I was referring, of course, to the Savage 99 and to Browning's BLR, lever actions both, yet that's about the only characteristic that they share.

The Browning looks like the traditional saddle rifle but its rack-and-pinion mechanics, detachable box magazine and upfront, rotating-lug lock-up puts it in a class by itself. The BLR can handle any modern, high intensity cartridge that will cycle through its action (it's currently chambered for the .22-250, .243, .257 Roberts, 7 mm-08 Remington, .308 Winchester and .358 Winchester).

Though a thoroughly modern lever action, the BLR's rack-and-pinion system was first seen back in the 1880s on the Bullard. The short-lived Sako Finnwolf also

Wind Eje possible of a set the reare is side top.

The new semi-rimmed .307 and .356 rounds (second from left and far right) are based on the .308 and .358 Win. cases, respectively. The new cartridges have thicker case walls to minimize stretching and other handload problems.

provides a mechanical advantage and shortens the lever throw. The excellent Winchester Model 88 was another modern, front-lug action but one that didn't survive. All things considered, one could make a good case for describing these guns as underlever-actuated turnbolts rather than "lever actions."

In many respects, the famous Savage 99

used the rack-and-pinion system which

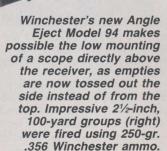
America's hunters seem

to agree that the lever-

action rifle will always remain a big favorite.

DEER
CHECK
STATION

is just as traditional a lever-action rifle as the Winchester and Marlin; after all, it's been around about as long. In both appearance and mechanical design, however, the Model 99 is unique. From its inception this rifle was capable of handling any smokeless powder cartridge that fit through its action. Its rotary spool magazine would also handle spitzer bullets, a development that was just getting a tryout over in Europe





The traditional Winchester M-94 has a narrow, slab-sided receiver and an underbarrel tubular magazine.

With the new, flat-shooting lever gun rounds like the .307 and .356, hunters need no longer stay in timber and shy away from open areas. when Arthur Savage incorporated it into his Model 99.

Having the basic capability of handling rimless, high intensity cartridges loaded with spitzer bullets, Savage and Browning have had no trouble in responding to new cartridge developments with their respective lever guns. Already the 7 mm-08 has been added to the BLR chamberings and could also be offered in the 99 should Savage decide to do so. The same holds true for the new .307 and .358 Winchester cartridges but there would be little point since both rifles are already chambered for the .308 and .358 Winchester, two rounds which duplicate and-then-some the .307/ .365, respectively.

Because the BLR and the Savage 99 were never restricted to the lower-pressure cartridges and round-nosed bullets normally associated with the traditional lever action, the "brush gun" personality derived

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therefrom didn't apply. Either gun can be topped with a 4X, 6X or even a 3-9X variable and be capable of taking deer, antelope, bear or whatever else would be appropriate for the same chambering in a bolt action.

Though these contemporary lever guns have kept abreast of the times by adapting to new cartridge developments, it's to be expected since there's nothing much to do other than change chambering reamers; it's those traditional finger-flickers that deserve our attention for that's where all the excitement and progress have been. By beefing up their respective lever actions and chambering them for the new .307 and .356, USRAC with its Winchester 94 Angle Eject and Marlin with its 336-ER are offering exciting new prospects to devotees of the traditional lever-action rifle. Still possessed of the beloved saddle gun look; the same carrying, handling and pointing qualities; the same ruggedness, reliability and rapidity of fire, these grizzled old veterans now have the added ballistic potential that makes them honest 200- to 225yard rifles. Let's now take a closer look at the various cartridges that are responsible for this transformation.

The .307 and .356 are nothing more exotic than semi-rimmed versions of the .308 and .358 Winchester, respectively. Rim diameter is a nominal .506 inch which matches that of the .30-30. Other than that rim being about .030-inch larger than the .308/.358, all other external dimensions are the same. Inside, however, the volume of the new .307/.356 case averages about three percent less than a typical .308/.358 hull, indicating thicker case walls. All other things being equal, case stretching in what historically has always been a "stretchy" action (as is any rear lock-up), is kept to a minimum. Case volume is further reduced in the .356 by the necessity to seat the 250-grain bullet deeper than in a .358. All things considered, then, maximum handloads for these rounds will be somewhat under those for the .308 and .358, and not as flat-shooting, what with the flatpoint bullets dictated by those tubular magazines. Nevertheless, they are potent performers indeed, considering they're launched by a couple of old lever actions generally thought to have gone into ballistic senility half a century ago!

The velocities, hence the downrange figures as well, are based on performance in a 24-inch test barrel. In the 20-inch barrels furnished on both the Angle Eject 94 and what Marlin is calling its 336-ERs, we can deduct about 125 feet per second (fps) from the .307's specs and around 75-100 fps from the .356's. Nevertheless, if you compare those figures with the equally unrealistic 24-inch barrel specs for the old .30-30 170-grain and the .35 Remington 200-grain loads, you will find that the new .307 and .356 are considerably more potent than the 90-year-old .30-30 and the 78-year-old .35

Remington. And with those higher velocities and energy figures come flatter trajectories. Zeroed two inches high at 100 yards, the 150-grain .307 loading is only 2½ inches low at 200 yards; the 180-grain load about four inches low. The .356, though not as flat-shooting as the .307, has its 200-grain bullet striking only five inches low at 200 yards using that same two-inchhigh 100-yard zero, and about 5½ inches low for the 250-grain slug.

Fully aware that if they were to have any chance at commercial success with these new cartridges in that old gun of theirs (albeit the already beefed-up Big Bore version), USRAC's R&D guys knew they had to solve the scope-mounting problem that has always plagued the top-ejecting 94. After all, what good was a 225-yard gun if you couldn't put a scope on it to see that far? They solved the problem quite neatly with the new Angle Eject model. By lowering the right receiver wall about 3/16 inch and repositioning the extractor and ejector to the 11 and 5 o'clock positions on the bolt face, respectively, empties are smartly tossed out the side instead of straight up. It is a feature I expect to see incorporated into the old .30-30 version as well.

The Marlin folks had no such problems adapting their Model 336 to the .307 and .376 since it always had side ejection. Though Marlin listed the new 336-ER in its 1983 catalog, the guns were just starting to come off the line in December, almost a year later than USRAC's 94 AEs.

It's going to be interesting to see how this old rivalry between the Model 336 and the Model 94 shapes up now that the latter's side ejection puts it on equal footing with the Marlin. One plus on the side of the Winchester is that the scope bases are provided . . . but then it costs more too.

It should be mentioned that the Angle Eject 94 is also available in the .375 chambering, as is the Marlin. I honestly believe though that the new .356 will quickly make obsolete the young .375. The former just flat out beats the .375 by pushing a slug of equal weight (250 grains) at higher velocities delivering more energy over flatter trajectories. That, in turn, makes hitting easier out at 200 yards and beyond. The way I see it, if a guy's looking for a traditional lever gun with a really big hole in the barrel and the .356 isn't big enough, he'll go for Marlin's .444 or .45-70 calibers.

In that regard, Marlin has the truly bigbore lever gun market all to itself with its 1895-S and .444-S. Handloaders, especially, really can get impressive performance from the .45-70 in that the 1895-S is capable of handling much higher pressures than the 25,000 CUP limit used for factoryloaded ammo (in deference to old "trapdoor" Springfields). For handloads specifically listed in the Speer, Hornady and Sierra manuals for the 1895-S, an operating limit of 40,000 CUPs was used. The resultant performance is very impressive. Speer, for example, lists a load of 56 grains of H-322 as providing its 400-grain flat-nose bullet with 1,885 fps in the Marlin 22-inch barrel. That load whumps up 3,200 foot pounds of muzzle energy, enough to make it a highly effective rifle for elk and moose in heavy timber or even for the big bears at the moderate ranges they are normally taken from.

The .444 is already loaded to optimum pressure levels by Remington (the only game in town) so handloading won't improve what is already impressive performance. For several years handloaders had an edge by using Hornady's excellent 265-grain bullet in their .444s but Remington wisely decided to offer it alongside the original 240-grain load. Handload or factory fodder, the 265-grain bullet brings out the best in the .444, making it comparable to the .45-70 for the same applications.

Yep, no doubt about it, the old lever-action rifle has come a long way these past



Remington now offers Hornady's excellent 265-grain flat point bullet in its .444 caliber factory ammo.

few years—a bum-to-contender story if you will. Today's version of the traditional underlever saddle gun may look pretty much as it did in 1900 but it now offers the kind of power and reach never thought possible before. Accuracy, too, has been dramatically improved, thanks to the closer tolerances required of these more potent lever gun rounds, and to heavier barrels on both the Marlin and Winchester. My .375, .444 and .356 all shoot under 2½ minutes of angle with factory ammo and a little better with tailored handloads.

This new-found potential still doesn't make these guns 350-yard plains rifles or 400-yard varmint-busting tackdrivers. But it sure takes them out of the brush gun stereotype. No longer will we be able to dismiss the saddle gun as a ballistic wimp that lobs wheel weights with mortar-like trajectories. After 90 years these grand old guns have been given a second childhood. And it doesn't look like it's going to stop here, either. Late word has it that Winchester is about to unveil a new 7 mm cartridge for the Angle Eject based on a necked down .30-30 case. Specs haven't been finalized at this writing but USRAC's Ed Vartanian tells me they're shootin' for 2,600 fps from a 139-grain bullet through a 24-inch barrel. Interesting . . . but puzzling. Wouldn't a necked-down .307 make more sense?