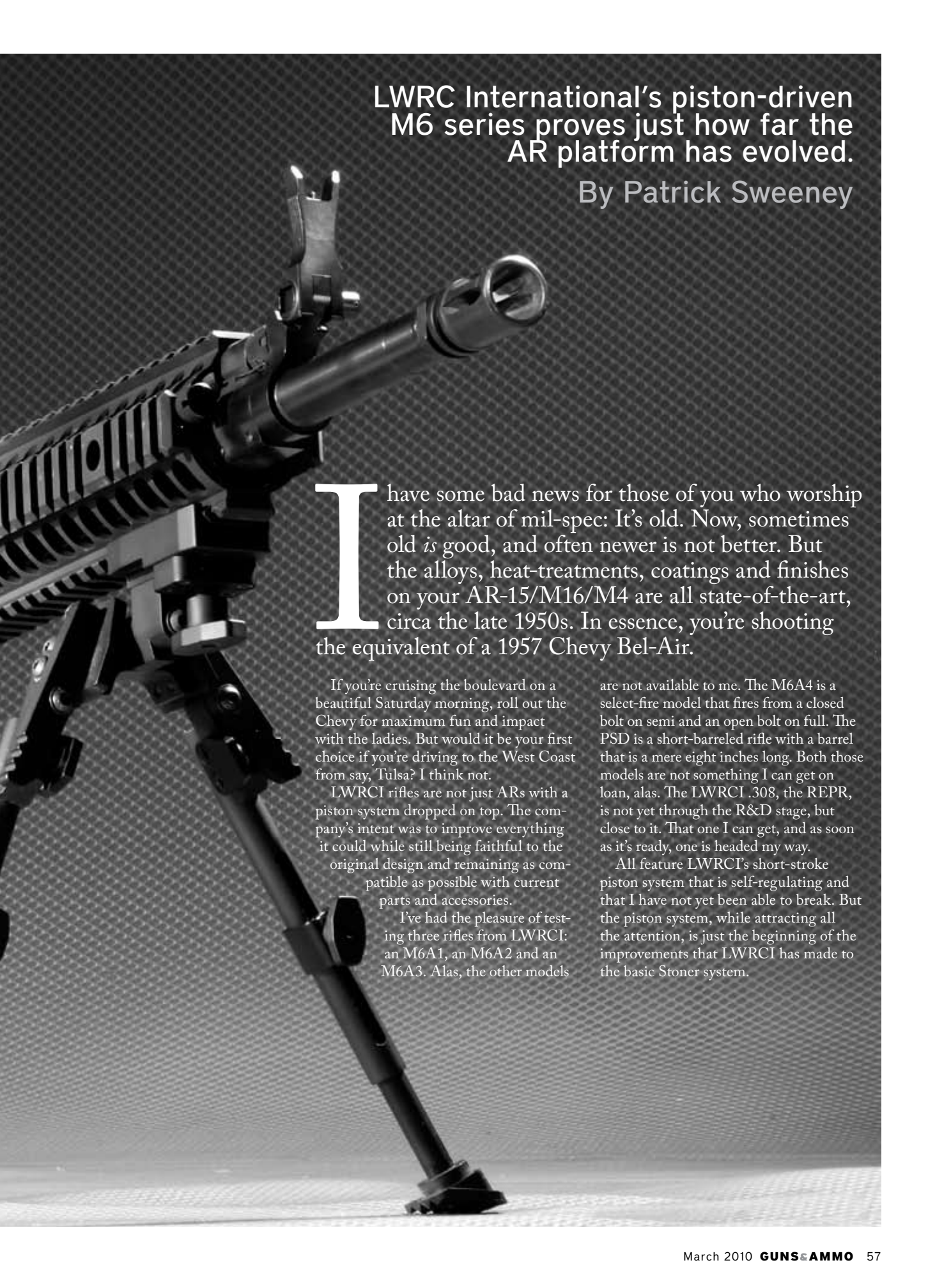


STATE-OF-THE-ART





LWRC International's piston-driven M6 series proves just how far the AR platform has evolved.

By Patrick Sweeney

I have some bad news for those of you who worship at the altar of mil-spec: It's old. Now, sometimes old *is* good, and often newer is not better. But the alloys, heat-treatments, coatings and finishes on your AR-15/M16/M4 are all state-of-the-art, circa the late 1950s. In essence, you're shooting the equivalent of a 1957 Chevy Bel-Air.

If you're cruising the boulevard on a beautiful Saturday morning, roll out the Chevy for maximum fun and impact with the ladies. But would it be your first choice if you're driving to the West Coast from say, Tulsa? I think not.

LWRCI rifles are not just ARs with a piston system dropped on top. The company's intent was to improve everything it could while still being faithful to the original design and remaining as compatible as possible with current parts and accessories.

I've had the pleasure of testing three rifles from LWRCI: an M6A1, an M6A2 and an M6A3. Alas, the other models

are not available to me. The M6A4 is a select-fire model that fires from a closed bolt on semi and an open bolt on full. The PSD is a short-barreled rifle with a barrel that is a mere eight inches long. Both those models are not something I can get on loan, alas. The LWRCI .308, the REPR, is not yet through the R&D stage, but close to it. That one I can get, and as soon as it's ready, one is headed my way.

All feature LWRCI's short-stroke piston system that is self-regulating and that I have not yet been able to break. But the piston system, while attracting all the attention, is just the beginning of the improvements that LWRCI has made to the basic Stoner system.



LWRC International M6 Series

Type: Short-stroke piston semiauto
Caliber: 5.56x45, 6.8 SPC
Capacity: 30+1
Barrel: 10.5, 12.7, 14.7, 16.1, 18 in. (A3)
Overall length: 33.3 to 36.5 in. (16.1-in. bbl.)
Weight: 7 lb., 5 oz.
Finish: Anodized and NiCorr
Stock: Magpul MOE or MIAD
Sights: Folding Troy Industries, or DD and fixed front, post and aperture
MSRP: \$1,995 and up
Manufacturer: LWRC International
www.lwrci.com

Here are the three LWRCI rifles the author tested (top to bottom): M6A3, M6A1, M6A2.



All three models worked flawlessly, despite lack of cleaning, rain and cold, and did so regardless of the ammunition they were fed.

Starting with the barrels. Instead of the mil-spec SAE 4150, LWRCI uses 41V45. The 4150 is a chrome-moly carbon steel with half a percent of carbon in it, a very hard alloy. The 41V45 is mil-spec 4150 alloy with the addition of a smidgen of Vanadium, which increases the tensile strength. As if this weren't enough, the LWRCI barrels are cold hammer forged, which makes for perfectly formed rifling as well as denser steel. The barrels are then treated to NiCorr, a surface treatment that's better than hard chrome. The trouble with chrome is that it does not plate evenly, and it adds a few ten-thousandths of plating layer to the surface.

NiCorr is tougher, applies evenly, does not add thickness and increases lubricity over bare steel or chrome plating.

A TRUE 5.56

LWRCI barrels are 5.56 chambered and have a 1:7 twist. Some of you may have heard: The .223 and 5.56 are not the same. If you ever asked, there will be someone at the gun club who will discount that. "Why, I've shot lots of 5.56 ammo in my .223, and I haven't had any problems." Well, I've taught police classes for years now, and we see those problems frequently, most occurring in summer.

Rifles with .223 Remington-dimen-

sioned chambers suffer from increased pressure when using 5.56 mil-spec ammo, and we'll get blown primers when the sun is baking down. No worries about that with the LWRCI rifles; they have mil-spec chambers. (Just to check, I dropped my Ned Christiansen throat gauge down the chamber [www.m-guns.com] and received confirmation: 5.56.)

The carrier has been refined to account for the differing dynamics of any piston system. The typical adaptation of the carrier to a piston system is to make the thrust shoulder an integral part of the carrier. However, to do this you have to either start with a much larger piece of billet steel to machine from or change your forging dies. Instead, LWRCI used the standard forgings and made changes. The top, instead of having a flat sport for the carrier key, now has a whopping big dovetail. The new key is machined to fit the dovetail and is fitted and bolted down. At the rear, the carrier has been increased in diameter to deal with carrier tilt. The carrier is also plated in a proprietary nickel coating to increase lubricity, resist corrosion and make cleaning easier.



The gas system on the A2 is entirely under the handguard and yet is easily accessible for cleaning.



Better than you can hold: The A3, meant as a DMR, certainly delivers the goods, accuracy-wise.



Intelligent enhancements: All LWRCI carriers have been increased in diameter at the rear to deal with carrier tilt (left). The thrust lug on the carrier is pressed and locked into a hefty dovetail (right).

The M6 is your basic M4 clone, but with a piston inside in place of the gas tube. A 16-inch barrel, M4-type plastic handguards and a Magpul MOE stock are all solid, basic, cool and dependable. But the next step up is where most of you will want to start: the M6A1. There the plastic handguards are changed out for the LWRCI railed handguard, and the stock is upgraded to the Magpul CTR. The handguards have rail covers, and the Magpul MOE pistol grip is a single polymer grip with a hand-filling back-

strap shape. With a normal, fixed front sight and a folding rear (the LWRCI folder is a re-badged Troy Industries sight), you will have a blurry front sight in your scope, should you mount optics on the flattop.

The M6A2 solves that problem and does so in style. The forearm is the same LWRCI railed free-float design. The gas block/piston mount is swapped out for a low-profile unit, and the front sight is replaced with a folding Troy Industries model. The stock is now a Vltor EMOD,

with a compartment for batteries or small parts of an essential nature. With a scope on and the front sight folded, there is nothing to blur your line of sight. The pistol grip is the Magppul MIAD, with interchangeable front and rear inserts. Me, I generally strip off the oversize inserts and run a plain, straight-up-and-down Magpul MIAD pistol grip. I also take the rail covers off the forearm. Yes, I know rail covers protect your hands from the heat, but I find a nomex glove does that, too, and for less bulk. But hey, that's just me.

The M6A3 has a mid-length gas system to take advantage of a softer push from the gas port being farther forward. The gas block also has gas-flow settings; you can set it for Normal, Adverse, Suppressed and Off. And the gas block/piston housing has its own integral folding front sight.

Now, the LWRCI railed handguards are not just a convenient place to park a light. They free-float the barrel and are seriously bolted to the barrel nut. The top rail is level with, and a continuation of, the top receiver rail. The unit is stout enough to mount a Picatinny-rail-compliant M-203 onto it and stand the recoil. The top cover is also removable, so

CHRONOGRAPH RESULTS

Load	Bullet Weight (gr.)	Velocity (fps)	Extreme Spread (fps)	SD	Average Group (in.)
Black Hills FMJ (Blue Box)	55	2,831	41.1	13.9	1.5
Black Hills JHP (Blue Box)	77	2,499	37.0	13.2	1.25
Wolf FMJ	62	2,699	135	49.8	2.25
Winchester FMJ	55	2,798	64.9	21.7	1.75
ATI FMJ	62	2,840	20.0	6.0	1.5
Hornady TAP Urban	60	2,701	42.1	16.5	1.0
Hornady TAP Precision	75	2,410	67.1	27.2	1.25

Test rifle: LWRC International M6A2 with a 14.7-in. barrel (plus permanently attached flash-hider). Chronograph: CED M2 with IR sensors 15 feet from the muzzle, 10-shot average. Accuracy: average of four five-shot groups from a sandbag rest at 100 yards.

you can access and clean the piston when needed. Just don't mount anything on top that clamps to both the receiver and the top of the railed handguard. Otherwise you'll have trapped the top cover in place. The top rail is held on by a pair of locking nuts on the front end. Unscrew them until they stop (if you use a screwdriver, you can bust the retaining clips), then removal is simple: Slide the rail upper forward and lift.

All three models are available with short barrels, as well as 14.7-inch barrels with permanently fixed flash-hiders, making the barrels 16-plus inches long and on the A3, 18 inches.

SHOOTING SHORT AND LONG

I shot all three for groups and to get a feel for handling and function. To no great surprise, they all worked 100 percent. I mounted an EOTech EXP3 and EOTech G23 3X magnifier on the A2 and had a blast running drills and hammering the steel at my home range.

On the A3 I mounted the new Zeiss Victory Varipoint 1.1-4X scope. I had seen the new Zeiss at an industry gathering and was headed to the LE class soon after. The Zeiss folks simply unbolted it from the test rifle and handed it to me. So I used the bases they had used instead of my usual LaRue mount. At the low end of magnification it is wicked fast on close targets, and the 4X is useful on the farther ones. At the LE Patrol Rifle class, I had some fun with it. In a light drizzle I shot the state-required qualification course and fired a 300-25X. The five kneeling shots in the course (always my nemesis) got me again.

Later that day, in a harder rain, I took it to the 300-yard range and did my best to poke head shots. From prone in the muddy grass, I was able to consistently get three hits out of five-shot groups, despite the rain. The optics simply shrugged off the raindrops, and the ammo and rifle were up to it. But the conditions were conspiring against me. I'm sure with a solid shooting bench I could have done better, but the National Guard might object to my cluttering up its range with unnecessary gear. The rings Zeiss had included required clamping to both the top cover and the receiver, which is how I know about trapping the top cover in place. However, it is easy enough to arrange optics mounting to avoid that problem.

LOW MAINTENANCE

Despite the rain, the NiCorr-coated barrel shows no sign now of ever having been in the rain. Through the week-long class and after, I did not perform any maintenance on the M6A3. So it received



The LWRCi M6A3 in its DMR mode: GG&G bipod, Insight ATPIAL, Zeiss scope.



The triggerguard is sculpted and makes shooting with gloves a lot easier.



Despite rain, more rain and a lack of cleaning (and a resulting crusty gas system), the M6A3 never failed.

the "benefits" of a week of rainy weather, then repeated range trips once I had gotten home. Despite the gas nut gaining a crusty green growth (from jacket deposits oxidizing), the rifle never failed to work. I tried all three with a variety of ammunition, including steel-jacketed ammo, and fed them from my collection of maga-

zines. At no time did I have a problem. For accuracy testing back home, I put on my Leupold 3-9X in a LaRue mount and shot from a sandbagged rest.

Sooner or later I'm going to have to clean the gas system, at least on the A3. That will be easy. Make sure the rifle is unloaded, and remove the bolt and



A score of 300-24X, keeping the string of perfect scores going for another set of classes.

carrier assembly. Remove the top cover of the forearm, grab the skinny part of the piston rod, and pull it back. Once it clears the piston cup, you can then run it forward just past the cup and take the two pieces of the piston rod, the spring and the spring cup off the rifle. Then pull the piston cup off the gas block. Scrub, reassemble, and you're good to go for thousands more rounds.

Some might worry that a 1:7 twist might hinder accurate shooting. If you plan on feeding your M6 a steady diet of 40-grain Blitz bullets for varmints, you might be right. Super-light bullets and fast-twist barrels are notorious for not playing well with each other. Stick with 52-grain (or heavier) bullets and you won't have a problem. When I started checking velocities, I tried a few loads in all three barrels. As expected, with three same-length barrels the velocities did not differ as much as the statistical variance from group to group, so I spared myself endless hours of chrono drudge work.

As for accuracy, unless you're an NRA High Master these rifles will shoot as well as you can manage a trigger and keep the sights aligned. And while you will probably want to run a brush and cleaning patches down the bore for accuracy's sake, you won't have to chip chunks of anthracite off your bolt and carrier.

If you missed the recent buying wave of ARs, don't just catch up with your shooting buddies. Take a jump ahead of them.

G&A