



M-4 and M-16: It's High Time to Make a Change

THE M-4 AND M-16 HAVE A LONG HISTORY OF PROBLEMS. SOLUTIONS ARE AVAILABLE, BUT FOR SOME REASON, THE MILITARY HAS NOT USED THEM.

For folks who have been on another planet the past few years, our troops in Iraq and Afghanistan are having serious reliability issues with the M-16 rifle and M-4 carbine — especially the latter.

The basic problems with the M-16 and M-4 are nothing new. M-16 reliability issues date to the mid-1960s. More recently, a study of the M-4A1, conducted by the Special Operations Command in 2000, said the M-4A1 was “fundamentally flawed” for several reasons.

The M-4/M-4A1 carbine has also turned out to be a poor “people-stopper” when used with standard M855 ball ammunition. That’s less of an issue if you’re carrying an M-16, but most troops in the “Sand Box” are equipped with M-4 or M-4A1 carbines. The difference between the M-4 and M-4A1 is the M-4A1 has a flat-top upper receiver, but the M-4 does not. Most special forces have the M-4A1 with a MIL-STD-1913 rail upper receiver and handguard adapter. The M-4 has an M-16A2 type upper receiver. Most “Big Army” troops are equipped with the basic M-4.

History of Problems

There have been repeated calls for a new small-arms family to replace the M-16/M-4, notably the XM8 pro-

gram, which died a deserved death at the hands of Congress. In the words of an infantry colonel acquaintance at Fort Benning, Ga., the XM8 did nothing significantly better than the small arms it was intended to replace. The Mark 16 SCAR has also been proposed as a replacement for the M-16/M-4 family, but like the XM8, the Mark 16 really doesn’t do anything much better than the weapons it would replace. The Mark 16 was developed for special operations because the M-4s reliability issues seemed beyond the capability of the Army and contractor to rectify. The Mark 16 was never intended as a replacement for current small arms, nor should it be, particularly when the M-16/M-4 reliability and lethality issues can be rectified without acquiring new arms. All that’s necessary is what the military calls a product-improvement program, or PIP, which upgrades the current weapons.

My first encounter with the M-16 came almost 40 years ago in Vietnam. I had been in the Army for five years and had heard horror stories regarding the M-16’s reliability — or lack thereof. It came as no surprise that when signing for my M-16A1 at Headquarters, Military Assistance Command, Vietnam, before going “up country” the arms-room sergeant told me not to bet the farm

on it. I didn’t and acquired a reliable M-1A1 Thompson Submachine Gun, which I used throughout my tour, while my issue M-16A1 sat in a wall locker, unfired.

Obviously, the M-16’s reliability issues are nothing new. The Army’s solution to early M-16 issues was intensive maintenance — far more than was required for previous rifles, such as the M-1 and M-14. (M-14s, by the way, are being withdrawn from storage and reissued by the thousands; many to special forces in a modified version called the Mark 14 Mod 0 Enhanced Battle Rifle.) In fact, a generation of American service personnel has come to accept the M-16 family’s intensive, time-consuming maintenance as the norm, when nothing could be farther from the truth.

The Issues

M-16/M-4 reliability issues begin with the weapon’s gas system, which in the words of another writer, “vomits into its own mouth.”

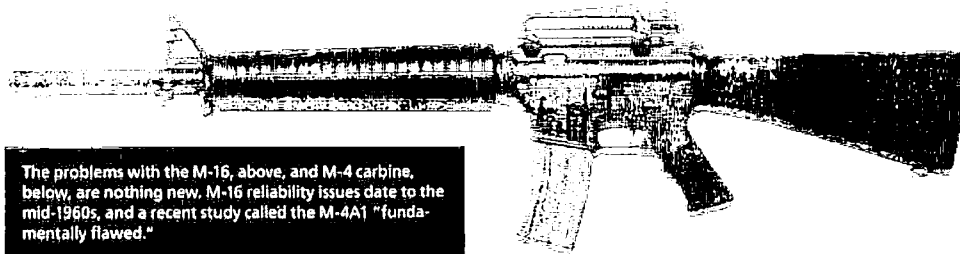
The Ljungman-type direct-impingement gas system is simple and lightweight, but it blows hot gases, carbon fouling and unburned powder directly back into the receiver. That requires intensive maintenance and heavy lubrication to keep the fouling soft and rifle operating. In Iraq, where dust the consistency of talcum powder gets into everything, the lubricant becomes a dust magnet, causing frequent jams — just what you don’t need in a firefight!

M-16 and M-4 weapons have this problem. Anyone who has cleaned an M-16 or M-4 remembers the caked-on carbon fouling that must be scraped off the internal components of the bolt-carrier assembly.

In the case of the M-4, the gas problem is worse because the gas port has been moved back to within six inches of the upper receiver, meaning gases entering the receiver are hotter and under higher pressure than those of the longer barreled M-16. The hotter, higher-pressure gases increase the operating temperature in the forward area of the upper receiver and magazine-well area. Just as bad, the gases cause accelerated gas-port erosion, further increasing pressures and dumping even more hot gases into the upper receiver. Higher pressures cause timing issues, which result in the weapon unlocking before pressures in the barrel have decreased and while cartridge cases are still clinging to the chamber wall, blowing extractors, breaking bolts and stripping locking lugs. A partial solution is to replace the direct-impingement gas system with a gas-piston and operating-rod system.

Solutions

There are several gas-piston/operating-rod (piston/



The problems with the M-16, above, and M-4 carbine, below, are nothing new. M-16 reliability issues date to the mid-1960s, and a recent study called the M-4A1 “fundamentally flawed.”



op-rod) systems that, for the most part, alleviate gas pressure and fouling issues. One is Heckler & Koch's HK416 replacement upper receiver, which is already in extensive use by special forces. There are two basic problems with the HK416 conversion, however. First, Big Army cannot get them. Second, H&K will not sell them commercially, so any civilian or police officer who wants one can't get one. There are alternatives, though.

One of the best is Patriot Ordnance Factory's P415, available as a conversion upper receiver or complete rifle. The P415 features a full-length MIL-STD-1913 free-float tube with rails spaced 90 degrees apart. Even better, it incorporates a simple and effective piston/op-rod system that can quickly be disassembled for inspection or maintenance.

However, the best feature of the P415 is it requires no lubrication. The P415 runs dry because the upper receiver interior is plated with silicon-nickel, and the bolt and all working components are hard-chromed. The silicon-nickel and hard chrome are self-lubricating, and the little fouling that gets into the receiver can

simply be wiped off with a dry rag.

I've fired the P415 extensively, and if I were to deploy to Iraq or Afghanistan, it would be my weapon of choice. If I could have only one AR-type rifle, it would be a P415.

As you can imagine, though, the P415 is relatively expensive. But if you want what is arguably the most reliable AR-type carbine on the planet, the P415 is the way to go. In documented testing, P415s have fired more than 20,000 rounds without cleaning or lubrication, other than wiping fouling off with a dry rag. That record is unbeatable by any other manufacturer's product at any price. My P415 has never been lubricated, other than a light spray of TW-25B dry PTFE on the internal components after wiping them off with a dry rag. TW-25B is a dry lubricant and doesn't attract dust.

For folks on a budget, or who simply don't want the expense of purchasing a complete piston/op-rod upper, there's the Ares Defense GSR-35 Black Lighting piston/op-rod conversion. The GSR-35 simply replaces the M-4 gas tube and bolt carrier with a

piston/op-rod unit and a bolt carrier configured for use with an op rod. The conversion takes minutes using simple tools, and should be well within the capabilities of anyone with a good working knowledge of the AR-type system. I installed a GSR-35 onto an M-4 type carbine in less than 15 minutes, and the system has functioned with total reliability since. Like other piston/op-rod systems, after the GSR-35 is installed, fouling issues are resolved. The only down side to the GSR-35 is it's only available for short-handguard M-4-type carbines, though versions for rifles with full- and intermediate-length handguards are being developed.

Any of the systems mentioned will greatly reduce the need for heavy lubrication and intensive maintenance, though the P415 is the only one that eliminates conventional lubrication.

The bottom line for the M-16/M-4 family is that after the direct-impingement gas system has been replaced, intensive maintenance is no longer necessary. That doesn't mean the carbine no longer

requires cleaning — just not daily. Any of the systems mentioned can be installed on existing weapons.

Conclusion

Our troops are burdened with basic weapons subject to chronic reliability issues in the Sandbox, but the fixes are simple, available and relatively inexpensive compared to buying a new small-arms family.

I must wonder why the Army hasn't done something to address these well-known, extensively documented M-16/M-4 reliability issues. The solutions already exist, and the military definitely doesn't need a new family of small arms.

Civilians don't have to use issued carbines, however. Although H&K will not sell its HK416 commercially, even to law-enforcement, anyone can buy a P415 or GSR-35 and upgrade their AR-type rifle or carbine. Either is well worth the investment.

— Charlie Cutshaw is a decorated Vietnam veteran and firearms expert from Alabama.

A.R.M.S., Inc.
ATLANTIC RESEARCH MARKETING SYSTEMS, INC.

OUR REPEAT ZERO THROW LEVERS® WILL NOT FREEZE OR ABSORB SAND & MUD LIKE THREADED & RATCHET DESIGNS

36 Years of Standardizing Military, Law Enforcement & Commercial Mounts

Shown with #35QD® and #35® 30nm rings & medium spacer

On Target & On Track

ATLANTIC RESEARCH MARKETING SYSTEMS, INC.
220 West 40th Street, New York, NY 10018-0040
Tel: (212) 904-7015 • Fax: (212) 904-7040
www.armsmounts.com

#22 Throw Lever® 30mm Rings (Available in Low, Med, & High)

#35QD® Throw Lever® Mount For 30mm, track mounted rings. #35® Rings available in Ultra Low, Med, and High (Low and High will assemble)