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COMBAT ARMS

2013

FIRST LOOK

MR762A1

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HK MR762

NO RIFLE'S DESIGN FEATURES
HAVE EVER SEEN MORE COMBAT.



BY TOM BECKSTRAND
PHOTOS BY BRAXTON LEE PETTY

IN 1936, MELVIN JOHNSON WAS RUNNING AROUND HIS HOMETOWN OF BOSTON, Massachusetts, embroiled in controversy with several U.S. Army Ordnance officers. Johnson claimed that his short-recoil-operated rifle was much superior to John Garand's system and that anyone who argued otherwise was either a liar or a fool. Johnson even went so far as to submit a 34-page report to the Army's Chief of Ordnance, General Wesson, in which he criticized the Ordnance Corps regarding their fielding policies taken with the M1 Garand.

History shows that Johnson's pleas fell on deaf ears and that the Garand went on to be wildly successful, while his "Johnson Rifle" only saw limited fielding. The two units that fielded the Johnson rifle in World War II were the U.S. Marine Raiders and a joint Canadian/American unit known as "The Devils Brigade," the First Special Service Force (FSSF). The two units have some seriously celebrated history and were the forerunners of our nation's special operations community. Johnson's design may not have been prolific, but the biggest badass of the day carried his gun into combat.

What makes the Johnson rifle relevant today was his unique design, which incorporated an eight-lugged rotating bolt that locked into a barrel extension. Johnson's rotating bolt and barrel extension later saw incorporation into Eugene Stoner's direct-impingement rifle. The world first got heavy exposure to the Johnson/Stoner rifle when the AR-10 hit in the mid-'50s. Johnson's rotating bolt and barrel extension are, arguably, the most recognized and common gun parts of our time. While the AR-10 was largely stillborn, Johnson's rotating bolt and barrel extension would go on to see widespread use in every one of our nation's conflicts since World War II.

7.62mm AND DIRECT IMPINGEMENT

The AR-10 was only adopted in small quantities by Sudan and Portugal. The 7.62mm design languished from the mid-'50s until it was resurrected by Knight's Armament in 1993. Eugene Stoner teamed up with Reed Knight in the early '90s to further refine the original AR-10



Old Melvin Johnson would recognize this bolt. The eight-lugged rotating bolt and barrel extension that it slips into are the reasons why AR-pattern rifles can be made from aluminum. Notice that the HK's bolt has dual ejectors.

design and bring it to market. Their goal was to produce an accurate and reliable 7.62mm rifle.

Knight named his new rifle the SR-25, "SR" standing for "Stoner Rifle." SOCOM fielded the SR-25 in 2000, and the rifle soon found its way throughout the Special Operations Community. Samples I saw and had been issued during my time

in the Army led me, and just about every other Special Forces soldier with whom I've discussed the topic, to believe that each SR-25 performed differently than the next. Some would shoot well, but many would not. Consistency is not the SR-25's strong suit.

At almost exactly the same time, SOCOM launched an effort to remedy the weakness they identified with their issued M4, namely its direct-impingement gas system. SOCOM formed a team to work closely together with HK to incorporate HK's gas-tappet system onto the M4. The perceived problem with the M4 was that it required lots of lube to function effectively, required specific ammunition to ensure reliable operation and didn't do well when fired with a barrel shorter than 14½ inches (especially when that short barrel had a suppressor).

The reason the direct-impingement gas system causes the issues listed above is that it channels hot, burning gas from a port in the barrel back into the receiver to cycle the action. The system is a closed loop, so any changes in powder result in pressure changes that affect bolt speed. This can cause the rifle to malfunction. A lot of good men died in Vietnam before we figured this out.

The direct-impingement dilemma is that, while the system is simple and easy to repair, it requires an understanding of its design limitations to ensure reliability. The hot gas coming into the receiver cannot be manipulated without an adjustable gas block, a complicated part prone to failure. The hot gas also burns away the lube required to ensure that the rifle works reliably. An entire



HK's upper receiver is slightly taller than its direct-impingement contemporaries. This is one of the few visual indicators that the rifle has a piston operating system. The taller upper receiver requires shorter scope mounts.



industry has sprung up around lubrication for AR-pattern rifles. Also, ARs will become more dependent on lubrication as parts wear and the springs fatigue.

SOCOM figured there was enough of a design weakness with the M4 that they moved ahead with HK's proposal to adopt their gas-tappet system to the rifle. It's important to remember that each time we fire an M4 (chambered in 5.56mm), we burn around 21 to 23 grains of powder. "X" amount of that burning gas gets channeled back into the receiver to cycle the bolt-carrier group. This was the problem SOCOM identified and wanted fixed.

When we look at the 7.62x51mm cartridge, we see that it burns almost exactly twice the powder a 5.56mm cartridge does. The 7.62 sits right around 46 grains of powder. To cycle the much heavier bolt-carrier group of a direct-impingement 7.62mm rifle, a much larger amount

of hot, burning gas must get channeled into the receiver. This exacerbates the original problem that SOCOM tasked HK to fix.

The SR-25s and now M110s in service are some of the filthiest-running guns you'll ever shoot. They require lots of gas to cycle, and the problem only gets worse when we shoot suppressed. Suppressors increase port pressure and push more gas back through the closed direct-impingement system. These guns get dirty quickly and require careful attention to their lubrication if we expect them to work reliably. If ever there were a rifle whose reliability would benefit from a gas-tappet system, the 7.62mm is it.

THE 416 GIVES BIRTH TO THE MR762A1

HK's design team fielded the HK 416 after building and refining their AR-pattern rifle that had been retrofitted

The bolt, bolt carrier, upper and lower receivers, safety and bolt release are all easily recognizable as AR-pattern parts.



HK MR762A1	
CALIBER	7.62x51mm
CAPACITY	10 or 20
BARREL	16.5 in.
TWIST RATE	1:12
GAS SYSTEM	Gas tappet (or gas piston)
MSRP	\$3,995
MANUFACTURER	HK 706-568-1906 hk-usa.com

with their gas-tappet system at the request of SOCOM. HK's effort to build a more reliable AR-pattern rifle would later compete against the M4 and other designs for use within JSOC in 2006. HK's 416 defeated all comers and won the contract. JSOC renewed that contract again in 2012; that makes twice they've voted and twice they've selected HK.

From 2006 until now, the HK 416 has seen millions of rounds fired through it. This was due largely to the fact that our country was and is at war, and the men carrying the rifles remained gainfully employed the entire time with both training and combat. Small refinements have been made to the original design, thanks in part to the type of research and development that can only come through years of experience and so many rounds fired.

HK's gas-tappet system has been fielded and tested under the most extreme conditions for many years now. Much like Melvin Johnson's eight-lugged rotating bolt and matching barrel extension, few systems can claim such an exhaustive and thorough R&D.

Given the SOCOM-identified problem with direct-impingement systems and the exacerbation that occurs when we use that system on a 7.62mm rifle, it



The HK MR762 accepts either 10- or 20-round magazines. The magazines are proprietary HK mags. The rifle will not accept magazines designed for the SR25.



The railed upper receiver and forend accept a wide variety of iron sights and AR accessories. The Picatinny-railed forend is one of the rifle's most endearing features, as it makes it easy to mount a wide variety of optics.

seems natural that HK would develop a 7.62mm rifle that uses their gas-tappet system. That's exactly what happened when HK built the 417 and the MR762A1, its semiauto counterpart.

The HK 417 is a semiauto 7.62x51mm AR-pattern rifle that uses HK's gas-tappet system instead of the Stoner direct-impingement system found on the SR-25. With the HK 417, we get all the benefits of the AR's superior ergonomics, a tried-and-true rotating bolt with barrel extension that has been in use since 1936 and HK's legendary gas-tappet system that has seen heavy use within our own service since 2006. I doubt there has ever been a rifle assembled using design features more heavily vetted than the HK 417.

The big selling point for the AR has always been its light weight and ergonomics. The light weight of the AR is made possible through use of Johnson's bolt and barrel extension. These two parts absorb almost all of the abuse and pressure produced when we fire the rifle. This allows manufacturers to use aluminum for the rest of the receiver, which keeps the rifle light. The bolt and barrel extension are both incorporated into the MR762A1.

The AR also has superior ergonomics. The layout of the fire-control system makes it easy to quickly operate the safety to fire the rifle. The location of the magazine release and bolt catch make them readily accessible, so changing magazines and clearing malfunctions are a snap.

The AR has been gaining market share in the precision rifle segment because of the reasons listed above and thanks to its forend. The AR forend allows the barrel to free-float, which greatly improves accuracy. The length of the forend also allows the shooter to easily mount night vision systems forward of their primary optic without having to remove them. Given that much of our fighting of late has been at night, this is a big deal.



The author tested the rifle with Trijicon's TARS riflescope. The short 3-15X scope is an excellent match for the MR762A1, as there's still enough room forward of the objective lens for night vision equipment.



The HK 417/MR762 is to the battle rifle market what the HK 416 is to the carbine market. Just about every military that's been to war in the last 10 years is fielding both carbines and battle rifles. Carbines are great for general use, but battle rifles are crucial for times when we face an enemy who knows how to use cover or when ranges exceed 200 yards.

The 417/MR762 fills the role currently occupied by the M14/M1A, SR25/M110 and other precision rifles such as HK's own PSG-1. It's difficult to mount a primary optic on an M14/M1A without heavy modification, let alone use night vision or thermal devices.

The rifle is also heavy, and it requires a skilled armorer to keep it shooting well.

The SR-25/M110 isn't a consistent performer shot-to-shot (one Special Forces NCO I know refers to his as "Lightning" because it never hits the same place twice), and it uses Stoner's direct-impingement system that fouls the rifle much more quickly than its 5.56mm little brother. SOCOM has demonstrated that they're not in love with the DI system, so HK's MR762 makes an excellent candidate to replace the SR25/M110. Unfortunately, the military is broke, so this probably isn't going to happen.

Finally, HK's own PSG-1 is boat-anchor heavy, and the forend doesn't allow us to mount any night vision, infrared lasers or thermal imaging sights. While the PSG-1 was once considered the most accurate semiauto rifle made, it is now just average in the accuracy department. The 417/MR762 is every bit as accurate as the PSG-1, but gives us all the flexibility and benefits found in AR-pattern rifles.

HK's buttstock is collapsible and has an adjustable length of pull. The stock also has two sling attachment points and an effective recoil pad.

SHOOTING THE MR762A1

Shooting the MR762A1 was like shooting any high-quality AR. The ergonomics of the rifle make it easy to shoot off the bench, and the collapsible buttstock make it easy to adjust length of pull to my tastes. The trigger on the MR762 feels a lot like a Mil-Spec trigger on any AR, smooth but heavy with a hint of creep.

I was able to shoot the rifle enough to test it with Federal's 168-grain Gold Medal Match. Five-shot groups for the rifle averaged 1.1 inches. For a battle rifle with a hammer-forged barrel designed to last forever, these are good groups.

The MR762A1 represents about 80 years of gun design using key features that have seen every war we've fought in since World War II. From the rotating bolt and barrel extension first designed by Melvin Johnson to the AR-pattern designed by Eugene Stoner to HK's own gas-tappet system that has defeated every other DI and gas-piston gun out there for service within SOCOM (twice), the MR762A1 combines all of these tried-and-true features into one gun. If I were to crown one rifle as king of the battle rifles, the MR762 would be it. **CA**

PERFORMANCE

Type	Bullet (gr.)	Avg. Group (in.)
Federal Gold Medal Match	168	1.1