

M27

THE U.S. MARINE CORPS'

NEW INFANTRY AUTOMATIC RIFLE

PART ONE



For the past several years *SADJ* has been following progress of the US Marine Corps' program to identify and field a suitable alternative to the M249 Squad Automatic Weapon. While the 5.56mm belt fed SAW is touted as a relatively portable weapon that can pump out a high volume of fire, many of the Leatherneck MOS 0311 grunts who have been humping this twenty-plus pound package since 1985 have been asking for something lighter, simpler and more reliable. This sentiment has been repeated by many in their chain of command from fire team leaders to flag officers.

Like most any significant change to the status quo, the SAW-replacement process has been difficult as various factions have made their often contentious positions known. Details of this struggle within the Corps, spanning more than two dozen years, will be provided in Part 2.

Meanwhile, the decision has been



by ROBERT BRUCE



"AFTER A RIGOROUS TESTING PROCESS, BOTH IN GARRISON AND DEPLOYED ENVIRONMENTS, AND IN-DEPTH CONSULTATION WITH WEAPONS EXPERTS THROUGH THE CORPS, THE COMMANDANT APPROVED FIELDING OF THE M27 INFANTRY AUTOMATIC RIFLE. THE FIELDING OF THE IAR WILL SIGNIFICANTLY ENHANCE THE ABILITY OF OUR INFANTRYMEN TO GAIN AND MAINTAIN FIRE SUPERIORITY, REDUCE THEIR FIGHTING LOAD AND PROVIDE THEM A MORE ERGONOMIC AND ACCURATE WEAPONS SYSTEM THAT CAN KEEP UP DURING THE ASSAULT."

MAJOR JOSEPH PLENZLER, USMC SPOKESMAN, JUNE 2011

THE U.S. MARINE CORPS' M27 IAR

made and the Corps is well on its way to issuing more than 4,400 M27 IARs as fast as gunmaker Heckler & Koch can deliver them. By early 2013, every Squad Automatic Rifleman in Infantry fire teams and Light Armored Recon scout teams will be carrying the new IAR.

But don't mourn for the M249. A half dozen SAWs will be retained in each Infantry Rifle Company, available to the commander as tactical situations arise.

RIGHT TO THE SOURCE

Knowing that *SADJ's* readers deserve a close look at the Marines' new machine rifle, our contacts at U.S. based HK Defense answered the call, generously providing hands-on live fire and detailed information on this history-making addition to the Devil Dog arsenal.

Small Arms Defense Journal interviewed Robert "Robbie" Reidsma, on November 21, 2011, following the exclusive M27 briefing and live fire session he had arranged for us earlier that day at a special operations and law enforcement tactical training center called The Crucible in rural Stafford County near Fredericksburg, Virginia. Reidsma, a retired USMC Infantry Senior NCO, was hired by HK Defense in 2007. He was named by HKD as the IAR Program Manager in December 2009.

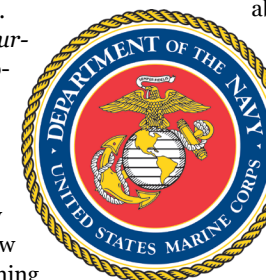
SADJ: *Your duty position title and responsibilities as they relate to the M27 program?*

Reidsma: I started off as one of the technical guys with Heckler & Koch Defense in our response to the Marine Corps' Infantry Automatic Rifle solicitation in 2007. I later became the Deputy Program Manager for HK's IAR effort, and then Program Manager. I still have

other responsibilities at HKD related to military, government and federal law enforcement sales and programs.

SADJ: *Briefly describe the experience and qualifications you have that are particularly valuable to the M27 program.*

Reidsma: Twenty plus years enlisted in the Marine Corps, the majority on the infantry side of the house. Sniper and sniper instructor, worked alongside with SYSCOM (Marine Corps Systems Command) with the Scout Sniper Day Scope and Scout Sniper equipment programs. That's where some of my acquisition experience comes from. I retired as Gunnery Sergeant in 2006 and went to work as a contractor for the Department of Defense. I was only there a short time before I came into HK about four years ago.



SADJ: *We understand that you aren't at liberty to talk to us about the Marine Corps' information-gathering, evaluation, test, and selection process. But tell us what HK did in response to the initial solicitation and follow-up stages.*

Reidsma: In the first place, everything coming out of HK has to meet NATO requirements under NATO AC/225 specifications. HK ensures that each weapon actually meets that regardless if it's going to military, law enforcement or civilian customers. If you buy a commercial handgun from HK it has met that process. That's why HK has such a good reputation for the quality because we don't say, 'this didn't meet a certain requirement so now we're going to sell it on the commercial market.' All HK products meet the same NATO requirement and we're ISO 9001 certified on the manufacturing side as well.

We reviewed the government's re-

PREVIOUS PAGE: 5 September 2011, Camp Leatherneck, Afghanistan. Shoulder to shoulder with members of his fire team who are armed with M4 carbines, a Marine Squad Automatic Rifleman, MOS 0311, with 1st Battalion, 25th Marine Regiment, continues his transition to Infantry Automatic Rifleman, battle sight zeroing his new M27 IAR soon after the unit's arrival in country. While the distinctive outline of the belt fed M249 tends to draw unwanted attention from the enemy, the M27 closely resembles the rest of the squad's rifles. (U.S. Navy photo by Petty Officer 2nd Class Jonathan Chandler) **LEFT:** 21 November 2011, The Crucible training center, Stafford County, Virginia. In Reidsma's hands, the M27's approx. 12 rounds per second full auto cyclic rate is no impediment to effective target engagement from prone to standing. In addition to a favorable ratio of 12.7 lb. weight vs. the relatively light recoil of its 5.56mm ammunition, the rifle's in-line stock, broomstick grip, quick adjusting sling, and forward-mounted bipod combine with the inherent accuracy of the weapon's 16.5 inch cold hammer forged barrel for remarkable long range performance. (Robert Bruce)

THE U.S. MARINE CORPS' M27 IAR

CUTAWAY VIEW OF M27 OPERATING SYSTEM



The M27 uses an HK proprietary gas system instead of the normal gas impingement system (gas tube) found on most M4/M16-type arms. The HK system employs a piston driving an operating rod to control the function of the bolt, preventing propellant gases and the associated carbon fouling from entering the weapon's interior. This increases the reliability of the weapon, reduces operator cleaning time, minimizes heat transfer to the bolt and bolt carrier; and lessens wear and tear on critical components.

quirements and solicitation to determine what HK products would meet the requirements, ensure we can meet the timelines, and support the evolution. We look at if we need to further test the item or modify and test an existing item, etc. Then we'll do an internal testing process. Whenever possible, depending on the size of the program, we'll try to mimic as best we can whatever the government is going to do.

So we have our set of results to compare with the potential customer's test findings; two sets of data that hopefully should come out similar. They don't have to be exact, but it should point in the same general directions. All said and done the testing came out pretty good for HK's IAR.

SADJ: *Comment on any significant tradeoffs necessary to meet IAR's specifications. Things like piston vs. gas, open bolt vs. closed, cookoff, barrel swap, belt vs. mag, etc.*

Reidsma: We have to meet the USMC's specifications. For the initial RFI (Request for Information) in 2005, we looked back at our XM8 or G36 type systems and we also looked at the 416 or possibly doing something else. When it came down to the actual specs in the requirement we

said '416 should meet the requirement.' A true commercial-off-the-shelf system that was ready at the time. The HK416 has a similar appearance and operator training as the current M16A4 and M4. Incorporate and integrate the ancillary items that meet the Marine Corps requirements and other specified items and then submitted the HK416 as our version of the IAR.

When it comes to open bolt vs. closed bolt, a closed bolt system is going to be more accurate compared to an open bolt, so it's a tradeoff. In order to meet the accuracy requirement we put our effort towards a closed bolt system because we knew we could get the accuracy out of it. So far this accuracy appears to average about 2-3 minutes of angle with a 5-round group using M855 ammunition. A benefit of the HK416/M27 IAR gas piston – operating rod style of operation is that there is a reduced amount of heat going back into the chamber and bolt group which allows for a sustained rate of fire higher than the M16/M4 direct gas operating systems.

SADJ: *How about not exclusively closed or open bolt, but a switchable system?*

Reidsma: With our gas piston system, the majority of the heat is located in the gas block area of the weapon so it is away

from the chamber. Roughly 90 percent of the hot gas and carbon exits through the muzzle of the barrel and gas block. This allows enough of a time/distance ratio before the chamber gets too hot. It's a "heat sink" that gives you enough time to get to at least the minimum sustained rate of fire specified under the conditions. The HK416/M27 IAR is a simple, more reliable system; closed bolt system for accuracy and the gas piston operation allows for the sustained rate of fire the Marine Corps asked for. A switchable system could be developed, but would add cost and time, and would need to be thoroughly tested for reliability, which is not always available or desirable under acquisition timelines and fiscal resources.

SADJ: *Belt fed vs. magazines remains an*

open question. You can slam an M16 mag in the side of a SAW.

Reidsma: You can, but there's a reliability question with the M249 and magazines. The machine gun technical and operator manuals will tell you there are reliability issues when you put a magazine into the SAW. The Marine Corps' requirement said the IAR had to work with the US government 30 round magazine. It all goes back to the role and use of an automatic rifle within the infantry team and squad compared to that of a belt fed, open bolt, light machine gun.

SADJ: *What performance and other factors led to the decision to adopt HK's modified 416 rifle as the USMC's Infantry Automatic Rifle?*

Reidsma: This is more of a USMC question. HK's IAR met the requirements.

SADJ: *Comment on HK's assertion in a recent press release that their entry was "Developed at no cost to the U.S. taxpayer...." HK wasn't paid to respond to the solicitation, to deliver samples, to be there*

during the testing, for spare parts if needed and these sorts of things along the way?

Reidsma: It's a true 'non-developmental, commercial-off-the-shelf' gun. A good, reliable system, already developed internal to HK based on previous requirements that HK took on board themselves. Yes, as with the other companies' systems per the contract, samples and spare parts were purchased and delivered for testing, however no government R&D dollars were spent.

SADJ: *What 'lessons learned' in formal tests, field evaluations, combat experience, etc. have resulted in engineering or other modifications to the M27?*

Reidsma: Most of these came from the users during the limited fielding portion; the two point sling, rail covers and bipod were upgrades to the system. Other than ancillary type gear there's really no major changes with the gun. More of the 'creature comforts' that allowed better marksmanship such as the sling or better employment of the system such as the bipod and rail covers. It goes back to newer "stuff" vs. older "stuff" with modifications.



ABOVE: HK's M27 IAR, while sharing many of the characteristics of the M16/M4 family of weapons, differs substantially in ditching the "Stoner system" direct gas tube that operates the bolt carrier. Instead, HK engineers chose a piston driven operating rod along with other mechanical refinements and improvements for greater reliability and durability. (HK Defense graphic) **OPPOSITE TOP:** 21 November 2011, The Crucible training center, Stafford County, Virginia. Big and little brothers. The USMC's new M27 Infantry Automatic Rifle is a lightly modified version of Heckler & Koch's HK416, seen here with a compact 10.4 inch barrel. HK's M27, supported by its Harris/LaRue bipod and topped with the Trijicon 3.5 power TA11SDO-CP, is equipped with accessory items that will be standard in USMC service including black colored synthetic rubber Manta rail and broomstick covers. (Robert Bruce) **OPPOSITE BOTTOM:** 21 November 2011, The Crucible training center, Stafford County, Virginia. Starting with the piggyback mounted RMR (Ruggedized Miniature Reflex), Trijicon Instructor James "Jimmy" White, provides a guided tour of the company's versatile 3.5 power TA11SDO-CP on HK's M27. Already in service with the Marine Corps as the SDO (Squad automatic weapon Day Optic) on M249 SAWs, and selected as the primary sight for its new M27 IAR, its official designation is SU-258/PVQ. (Robert Bruce)

THE U.S. MARINE CORPS' M27 IAR



SADJ: *The Marine Corps tells us that hot weather testing showed the desirability of slowing the cyclic rate a bit with a slightly larger exhaust port in the gas block. Other than that, were there engineering changes?*

Reidsma: As far as the gun goes, it's the HK416 system, the same thing. We did slightly adjust the gas block exhaust to further improve long term durability of the system in a range of environments and to better coincide with the intended use of the IAR and government ammunition. Most of the improvements were new developments at the time. You saw the firing pin retaining pin being round and captive and the reversible charging handle. Those were the new developments at HK at the time. Where now it's kind of a standard build or an additional accessory in a regular production run. We incorporated those developments into the M27 system. But as far as 'do we have

same as the M249. Sustained rate of fire is approximately 36 rounds per minute or three times that of an M16 and almost that of the M249 SAW sustained rate of fire of 50 RPM. In a comparison – and you have to look at how the system's being used and employed – the sustained rate of fire of 36 rounds per minute is what we'll say it will do. It can actually do better than that. Because it is a closed bolt to get the accuracy, the ambient temperature can play a role. As your ambient temperature decreases from 120 degrees you can actually get a higher sustained rate of fire out of the system.

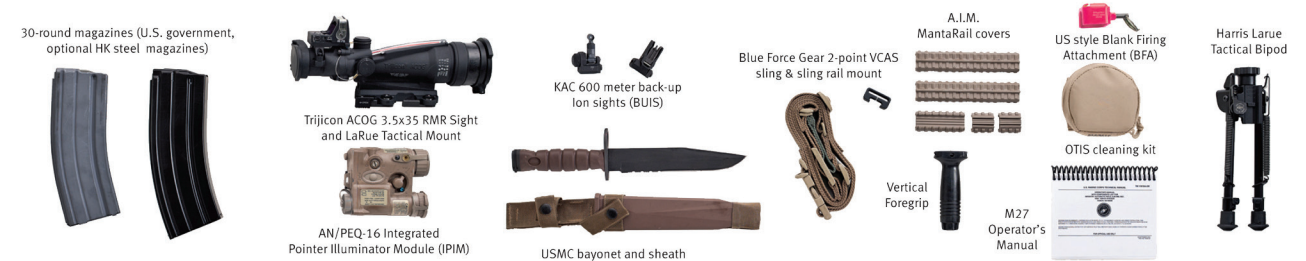
When it comes to the range, we'll list a 'graduated range' so it's what the sighting system will do along with the ammunition. So if you're using the SDO (Squad Day Optic) it will go out to a thousand meters; if you're using the iron sights it's out to six hundred. You can shoot the rifle out to six hundred, no problem at all and you can hit point targets with it. You can get area fire

Like you saw today it's very easy to handle. Easy to control in burst fire. It's incredibly accurate like you saw today at the range when we were shooting at three hundred yards and hitting the target on the eight inch head plate. And the rifle we were shooting has over fifteen thousand rounds through it.

When you do a comparison of the M249 and the M27, one can shoot just as fast as the other so if you really had to shoot six hundred rounds in about two or two and a half minutes you can. But (smiles) I'd be calling for air support by that point in time.

SADJ: *Comment on the choice of Trijicon's SDO as primary sighting device.*

Reidsma: The Trijicon Squad Day Optic is what was already on the Marine Corps' M249s. So that sighting system actually ended up working just fine on the M27 IAR. It's one of their assigned optics:



to change the operating system or do we have to change components or materials or something like that along the way?' the answer is really no. No magic, no HK witch doctor, nothing complicated (laughs). It's a commercial-off-the-shelf gun. And the cold hammer forged barrels last for fifteen thousand rounds, even with a lot of full auto fire.

SADJ: *We've asked the Marine Corps for their comparison of M27 vs. M249 as far as cyclic rate, sustained fire, range, accuracy, reliability, ease of handling, etc. Your comments?*

Reidsma: Cyclic rate is about 700 to 900 rounds per minute. This is about the

on a group of targets out to a thousand meters. Compared to the SAW it's the same thing. Compared to an M16A4, the M27 is a little bit further reaching due to the increased accuracy.

Reliability; fifteen thousand rounds barrel life and major components. It'll go beyond that but that's what we're guaranteeing as a minimum. Ten thousand rounds on minor items. One of the test process items we do is an endurance test with every lot of M27s we deliver to the Marine Corps. The government will pick one of the guns and we'll shoot fifteen thousand rounds the way they want it fired. We make sure we've still got the accuracy and the gun still functions and is reliable as required.

'The SDO will be on the M27.' From my experience, I actually like the SDO over the Rifle Combat Optic because it does have the extended eye relief in there so it's a lot faster to get on target. When you're talking about an automatic rifle on the move – more a Marine Corps tactical topic – with that system your target acquisition is so fast. Your probability of first round hits is incredibly high and that's exactly what you want as an infantryman closing with the enemy. It comes down to the gun being accurate, lightweight, being able to deliver a higher rate of fire, and the optical system on it with regards to finding the threat, and then being able to transition to engaging that threat. It's incredibly fast through the process.

OPPOSITE TOP: 21 November 2011, The Crucible training center, Stafford County, Virginia. HK's Robbie Reidsma (left) with an M27, and Trijicon's Jimmy White with an HK416 10.4 inch barrel version, inspect a silhouette target showing the results of some of the morning's CQB practice. (*Robert Bruce*) **OPPOSITE BOTTOM:** M27, disassembled. **ABOVE:** Accessories for each M27 IAR include items provided by HK per contract, while the Marine Corps adds the SDO sight, bayonet and laser module. HK offers its steel bodied high reliability magazines as an option, but the Corps is sticking with its standard issue aluminum 30-rounders, sending 22 of them off with each rifle. This adds up to a total of 660 rounds distributed among members of the auto rifleman's fire team in addition to their own basic combat load. (*HK Defense photo*)



SADJ: Comment on alternatives to standard-issue 30 round magazines to feed the M27. Things like the C-Mag, multiple 30s clipped together, etc.

Reidsma: It's specified that the IAR has to work with the standard issue magazines the Marine Corps fields. At HK we've done some informal evaluations of various high capacity magazines. You saw us using some of these today in the live fire. But it will be up to the Marine Corps to decide if they want something else.

SADJ: Comment on how easy or difficult it has been to integrate the M27. Things like training of operators and armorers, logistical support, changes in tactical doctrine.

Reidsma: The M27 IAR itself is like an M16A4. The operator ergonomics behind it; the control levers and everything, are basically the same as what's on an M16A4. So your basic infantry training, your qualification on the range going back

to 500 yards. All those techniques and operator ergonomics with the M27 IAR remains the same as far as how you use it, how you work the system, and how it's fired. So from an operator's standpoint it's as simple as put down one gun, pick up the other gun and go. Simple as that. Muscle memory is already there, training is already there, it reinforces either system, no problem at all that I am aware of. From the operators and armorers standpoint, the way the gun works is essentially very similar. The big difference is the gas piston with the pusher rod in the M27 IAR. You saw today on the range it's very easy to take apart and put together.

The armorer training is very easy, simple, and straightforward. A lot of what they already know about a regular M16A4 is similar to the M27 IAR. The actual operating system behind the gun is different than what's inside an M16A4. You've always got to keep that in the back of your mind from an armorer perspective or a user maintaining the gun.

Component replacement when

something does wear out is very simple. That speeds up your armorer process, cuts down on his time so he can actually work on other things or more things. The M27 IAR lasts for fifteen thousand rounds for the major components at a minimum, and I think it's ten thousand or right around there for parts and pieces like a spring or whatever.

HK's training part to this is 'train the trainer' concept. When we first delivered the guns to the Marine Corps we gave them armorer classes, gave them a basic operator class on this is how the gun works, this is how to maintain it, this is armorer stuff. They took it from there with 'NETTs' – New Equipment Training Teams.

The main thing to keep in mind is a lot of people will say 'it's HK, it'll last forever.' Well it won't. You still have to take care of everything; you still have to put lubrication on it, etcetera. The biggest thing I see is people will forget to lubricate up in the piston gas block area and the operating rod. And then if it starts getting sluggish on them it's like 'OK, yeah lubricate it.' But

to be on the safe side, we did run an M27 through a few 600 round cycles completely dry – it worked, but I would not recommend doing that.

SADJ: No special lubricant needed up there in that high temperature area?

Reidsma: No special lubrication is needed. Simple regular CLP (Cleaner, Lubricant Preservative; military-issued commercial "Break Free" brand product) is all that is normally required. Because the HK416 system has to meet all the Mil-Spec stuff that's out there already and be compatible with all the cleaning and lubricating compounds, all the nuclear, biological and chemical decontamination. It meets all the requirements or it wouldn't be put into the Marine Corps.

SADJ: HK has a \$23.6 million IDIQ (Indefinite Delivery Indefinite Quantity) contract with the USMC and they've recently ordered full rate production. Status report?

Reidsma: HK has a delivery order from the Marine Corps for 3,638 with full rate production right now. There are 458 that were delivered for Low Rate Initial Production and limited fielding on the Marine

USMC SQUAD AUTOMATIC-WEAPON DAY OPTIC (SDO)

(Tech Specs from Trijicon)

MANUFACTURER: Trijicon, Inc., Wixom, Michigan, USA

NSN: 1240-01-575-1724

USMC NOMENCLATURE: SU-258/PVQ

TRIJICON MODEL: TA11SDO-CP

MAGNIFICATION: 3.5 power

OBJECTIVE LENS: 35mm

EYE RELIEF: 2.4 in.

EXIT PUPIL: 10mm

FIELD OF VIEW: 5.5 degrees (31.5 ft. at 100 meters)

LENGTH: 8.7 in.

WEIGHT: 1.34 lbs.

RETICLE: Horseshoe and red dot with bullet drop compensator, graduated scale for M249 ballistics with both standard 19.5 in. and short 14.5 in. barrels. Illuminated by radioactive tritium and fiber optic light collector (no batteries needed)

WATERPROOF: 66 ft.

RMR: No magnification, 9 MOA amber dot, illuminated by tritium and fiber optic.

SDO ISSUED WITH: LaRue Tactical LT100 Quick Detach Mount, Tenebrax killFlash anti-reflective lens device, flip-up lens caps, SDO carrying pouch, lens pen cleaning device, ACOG manual

NOTES: In 2009, the US Marine Corps selected Trijicon's 3.5 power TA11SDO as its primary sighting device for the M249 light machine gun, to assist gunners in target detection, recognition, identification, and engagement. It includes the top-mounted Trijicon RMR (Ruggedized Miniature Reflex) sight, providing the operator with quick target acquisition at close quarter distances or when the weapon is mounted on a vehicle. The TA11SDO is also the USMC's pick as primary sighting device for the new M27 Infantry Automatic Rifle.

ABOVE: 21 November 2011, The Crucible training center, Stafford County, Virginia. In his introduction briefing for the live fire demonstration, Reidsma slides off the M27's one-piece quad rail to reveal the rifle's piston driven operating rod, a key factor in reliability and durability of the system. (Robert Bruce) **OPPOSITE:** 21 November 2011, The Crucible training center, Stafford County, Virginia. Discarding the M16's direct gas-blown operation that's handicapped by heat buildup and carbon fouling, the HK416/M27's bolt carrier is "kicked" back by an operating rod impacting a hardened surface that's integral with the bolt carrier. Reidsma told us this bolt and carrier had endured more than 15,000 rounds in Marine Corps testing and was still going strong in our familiarization (Robert Bruce)



Corps' birthday of November 10, 2010. It was really neat how that worked out.

(Editor's Note: The first batch of full rate production M27s has been delivered by HK to the Marine Corps. Full rate production will start deliveries by the end of calendar year 1st quarter.)

SADJ: Have other U.S. or allied military forces or law enforcement entities contacted your office expressing interest in the M27?

Reidsma: I do get calls and interest on the M27 IAR all the time and I refer them to the Marine Corps because they're the PICA, Primary Inventory Control Agency. If they actually want one that says 'M27' on it the request goes to the Marine Corps. If they want an HK416 with sixteen and a half inch barrel, two inch longer hand guard, I can sell 'em the HK416 and Trijicon can sell 'em the SDO. But I can not sell them an M27.

The other part is that a lot of our cli-

ents, I'd venture to say, have a few 416s already. For example, it's the standard issue rifle in the Norwegian Army. Other than that, I can't go into who, and what types of 416s.

SADJ: What have we missed that you would like to comment on?

Reidsma: It is neat to watch the Marines' eyes light up when they get down for the first time and shoot it. Lot of smiling faces, a lot of like 'wow, I've never had a gun group this good in my life!' A lot of first round hits on targets at long distance. It's definitely a confidence booster as well.

A lot of it, I think, comes out of what we were talking about on the range today. Getting out there and shooting the gun, how that gun is used. A lot of people will look at it like it's an M249 replacement across the board. And it's not. There's an overlap in capability but they're different capabilities based on the use.

The M249 that's in the automatic rifle role right now can hinder somebody's performance based on the fact that it's heavier.

Also, if the gun has a stoppage when you're in a firefight you've got to get down in the prone position, open the feed tray, you're outta the firefight for twelve or fifteen seconds which is crucial. And that's in the daylight. It gets way more complicated at night.

With this gun it's a blended capability of having a high degree of accuracy yet still having that higher sustained rate of fire. Because of the way the system works with a gas piston and a push rod operation it's keeping that heat from the chamber for a long enough period of time. And you're still getting that high degree of accuracy out of it along with the long life of it - fifteen thousand rounds.

SADJ: Many Marine veterans hold the M1918 Browning Automatic Rifle in highest regard. What would you like to tell them about today's M27 vs. the old BAR?

Reidsma: The BAR; .30-06 cartridge, twenty round mag, and weighing approximately twenty three pounds. The BAR had a lot of significant use over a long period of time. It is a big heavy gun with not a lot of magazine capacity. When we look at the

.30-06 cartridge that recoils a lot more than a current 7.62mm and 5.56mm rounds, there's probably no way we can take a .30-06 or even a 7.62 NATO cartridge and be able to get the same engagement criteria requirements and weight requirements that we can with the 12.7 pound M27, just due to that bigger, heavier recoiling system.

I think the M27 will be the BAR's little brother. It comes down to recoil management and to commonality in the Marine Rifle Squad with ammunition, magazines, everything else. That's part of it. The difference is this gun looks like and has the same ergonomics and controls just like an M16A4 and M4. So training wise, there's minimal training needed in going back and forth. The guys are basically already trained on the system they just don't even know it yet.

SADJ: Would you say to them that wars are fought differently now?

Reidsma: Yeah, we understand the advantages of the BAR's firepower for infantry squads in WWI, WWII and Korea, but in a modern day infantry squad, the other Marines are armed with M16s feeding 5.56mm ammunition from 30-round magazines. So now they have the M27, a modern version of the BAR that looks like the other systems they have and can deliver a higher volume of more accurate fires while minimizing fatigue as well as accept the ammunition and work reliably with the fielded magazine of the infantry team and squad. That fits the way the Marines fight, what they fight with and the nature of combat today.

If you need to reach out beyond five hundred meters or more and hit harder there are other weapons organic to the infantry company. You've still got 7.62mm M240 medium machine guns and the Corps is keeping some 5.56mm M249 light machine guns. Dragon missile systems, mortars, and more to call in for support. You've got helicopters and more in the whole Marine Air Ground Task Force with armament to bear on a given threat if it's way out there. Typically your Marine rifle squad fights out to the four hundred meter mark. They can influence and extend beyond that be-

OPPOSITE TOP: 21 November 2011, The Crucible training center, Stafford County, Virginia. Demonstrating the M27 in close quarters assault, White has both eyes open behind the Trijicon SDO as he slams burst after burst into the lineup of silhouette targets on Crucible's Range 5. (Robert Bruce)

cause of the system capabilities. But as far as your true fight, it's all inside that four hundred meter range.

SADJ: Would you want to clear buildings with a BAR?

Reidsma: No, I would venture to say you would not want to clear a house with a BAR. Just as you would not want to clear a house with an open bolt, belt fed light machine gun. It's too cumbersome. Again, having an automatic rifleman with an M27 IAR lends itself to every environment.

So whether he's got to swim with it, do urban work with it, fight in the jungle with it, out in the desert with it, in and out of vehicles with it; the M27 is much, much

easier to maneuver, get into action, and stay in action. **SADJ**

PART 2: FROM BAR TO IAR (NEXT ISSUE)

In the late 1950s, the Marine Corps made the ill-fated decision to ditch its iconic Browning Automatic Rifle of World War 2 and Korean War fame in favor of a bipod-equipped M14. This unworkable rig was replaced by the heavy and unwieldy 7.62mm M60 machine gun during the Vietnam War. The 5.56mm M249 SAW, a "baby M60" to some, followed in 1985. Now, some 27 years later, the Corps is rapidly fielding the M27 IAR. Learn how the Leatherneck chain of command came to grips with unit-level complaints about the SAW's shortcomings and got a suitable replacement through "the system."

USMC M27 INFANTRY AUTOMATIC RIFLE

(Tech Specs from HKD)

- MANUFACTURER:** Heckler & Koch GmbH, Oberndorf, Germany (HK Defense, Ashburn, Virginia, USA)
- NSN:** 1005-01-579-5325
- CALIBER:** 5.56 x 45mm NATO (SS109/M855 cartridge), muzzle velocity 2,900 (+/-) fps
- OPERATION:** Air cooled, gas operated, short stroke piston-driven operating rod, fires from closed bolt
- LOCKING:** M16 style multi-lug rotating bolt in carrier
- SELECTOR:** Safe, Semi-Auto, Full Auto
- RATE OF FIRE:** 700 - 850 rpm cyclic, 36 rpm sustained
- FEED:** US military standard 30 round M16 type magazine
- LENGTH:** (stock extended) 37.5 in.
- WEIGHT:** 8.16 lbs. weapon only. Combat weight w/loaded 30 round magazine, SDO and iron sights, PEQ-16 laser, sling, bipod, vertical foregrip, rail cover set: 12.67 lbs.
- BARREL:** 16.5 in. long, fixed (not quick change) barrel is cold hammer forged for exceptional durability, 6 groove rifling, 1 in 7 in. right twist, tipped with M16 type "birdcage" flash suppressor, integral bayonet lug
- SIGHTS (ASSIGNED BY USMC):** Trijicon 3.5 power SDO, Knight's Armament BUIS (backup iron sights)
- BUTTSTOCK:** HK 6-position telescoping stock with internal storage space
- ISSUED WITH:** 22 ea. US military M16 type 30 round magazines, Blue Force Gear's Vickers Combat Applications Sling and rail sling mount, AIM Manta Rail Covers, Harris Larue tactical bipod, Knight's Armament Backup Iron Sights and "broomstick" foregrip, M16 type blank firing adaptor, USMC operators manual, Otis cleaning kit, Ontario Knife USMC bayonet (M16/M4 compatible)

NOTES: The M27's nomenclature is a tribute to 2nd Battalion, 7th Marine Regiment, 1st Marine Division for its seminal role in championing a revival of automatic rifles in the Corps. It is now replacing the M249 Squad Automatic Weapon in all USMC infantry fire teams. The M27 is a slightly modified version of Heckler & Koch's highly respected HK 416 rifle, originally developed for U.S. special operations forces. The rifle's proprietary gas piston system was first introduced by HK on its G36, boasting cooler and cleaner operation than Stoner-type direct gas impingement of the M16 rifle and M4 carbine. The M27 features HK's 1 piece quad, free-floating, 11 inch long, M1913 Picatinny Rail system, barrel life 15,000 + rounds, parts life 10,000 + rounds, accuracy 2 MOA w/ service ammunition, "Over the beach" features allowing safe and effective firing after being fully submerged in water.



M27 FIELD STRIP SEQUENCE

21 NOVEMBER 2011 // THE CRUCIBLE TRAINING CENTER, STAFFORD COUNTY, VIRGINIA. PHOTOS BY ROBERT BRUCE



Robert "Robbie" Reidsma, M27 Program Manager for HK Defense, takes us through the rifle's field strip sequence. Place the selector on SAFE, remove the magazine, pull back on the charging handle to retract the bolt carrier, check the chamber to ensure no cartridge is present. Return the bolt carrier assembly to the forward and locked position.



Using the bullet point of a cartridge or similar tool, push the rear takedown pin through from left to right until it stops in the fully extended position where it remains captive in the lower receiver.



Pivot the upper receiver open, depress the catch on the charging handle and withdraw the bolt carrier assembly from the rear. The series of triangular cuts on the side of the bolt carrier work with the forward assist. While it is not necessary to separate the receiver halves, this can be done by pushing the receiver pivot pin through from left to right until it catches in the fully extended position.



Continue to pull the charging handle to the rear until resistance is encountered. Lift up on the charging handle and separate it from the upper receiver.



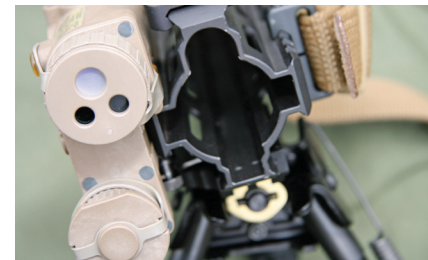
The charging handle can be used to depress the buffer detent, allowing the buffer assembly and spring to be withdrawn from the buttstock tube. The red dot and HK marking show that this is the special design with granulated tungsten filler.



Lugs on the bolt head can be used as a wrench to turn the Free Floating Rail System (FFRS) retaining screw counter-clockwise, then pull until it catches in the fully extended position.



Pull forward on the FFRS to separate it from the barrel assembly. Note how the FFRS retaining screw is securely held in the deep groove machined in the barrel locking collar.



The M27's one piece, four rail FFRS as seen from the muzzle end.



Disengage the piston rod from the gas piston by pushing back against its coiled spring and lifting it free.



Pull the gas piston from the gas block.



To disassemble the bolt and carrier, first push the firing pin retaining pin through from right to left until it catches in place.



Lift up on the end of the spring loaded drop safety and withdraw the firing pin and spring assembly from the rear of the bolt.



This frees the cam pin to be lifted out of bolt and carrier.



Slide the bolt forward out of its carrier. It is not necessary to remove the extractor each time the weapon is stripped and cleaned.

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