

**Plaintiff's
Ex. 18**



M27 Infantry Automatic Rifle

5.56 mm x 45

EXHIBIT
7



M27 Infantry Automatic Rifle 5.56 mm x 45

A variant of the Heckler & Koch HK416, the M27 Infantry Automatic Rifle (IAR) was developed by the U.S. Marine Corps' design program for a lightweight, gas-operated, fielded light machine gun.

The "M27" designation represents a tribute to the 2nd Battalion, 7th Marine Regiment which is the unit that devised the original concept of the Infantry Automatic Rifle. The Infantry Automatic Rifle program began in 2001 as a "needs statement" within the Marine Corps. Operational experience in Iraq and Afghanistan in the last several years reinforced the requirement.

The program called for a magazine-fed 5.56 mm automatic rifle designed to be operated by a single Marine and possessing greater accuracy, increased reliability, and lighter weight than the existing belt-fed 5.56 mm machine gun. These factors would enhance the automatic rifleman's maneuverability and speed to either augment and/or replace the belt-fed M249 Squad Automatic Weapon (SAW). As a result of testing and operational deployment has confirmed, the IAR is more readily adopted for house-to-house clearing operations and day-to-day employment by the automatic rifleman compared to an M249. A fully loaded M27 IAR weighs less than half that of an M249 SAW.

During a rigorous selective process that began in 2005, the Heckler & Koch HK416 IAR competed against more than seven weapon models submitted by six companies. In 2009, after surviving several "down selects" that eliminated all but a handful of candidates weapons, the HK416 was selected as the finalist from the three remaining companies (the others being FN and Colt Defense).

Initial operational testing in locations including the Marine Corps Mountain Warfare Training Center and Marine Corps Air-Ground Combat Center further demonstrated the suitability of the HK416 for the Infantry Automatic Rifle role.

In 2010, HK was awarded with a Low Rate Initial Production (LRIP) order for approximately 500 systems. The rifles were delivered on the Marine Corps' Birthday, November 10th, 2010 to the 2nd Marine Division, 2nd Marine Expeditionary Force, for initial fielding, and selected Marine Infantry units for user assessments.

The Marine Corps completed their initial fielding and assessments in the summer of 2011 and in the autumn of 2011 Heckler & Koch was awarded a full Rate Production award.

With a 10.4 inch barrel, this HK416 variant is handy when operational demands make a short barrel more suitable. Despite its short length, accuracy matches or exceeds competing M4 (M4) variants with 14.5 inch and longer barrels.



HK416 – with 10.4 inch barrel

The HK416 with 14.5 inch barrel is the variant closest to the M4 carbine. Aside from standard features like the Free Floating Rail System (for optimal accuracy), barrel service life exceeds 15,000 rounds.



HK416 – with 14.5 inch barrel

The MRS56A1 is a semi-automatic variant of the HK416. Well-suited as a law enforcement patrol carbine, the highly accurate 5.6 mm MRS56A1 is commercially available in most U.S. states.



HK MRS56A1 – semi-automatic with 16.5 inch barrel

Reversible ambidextrous charging handle

Trijicon (ACOG) 3.5x35S Squad automatic weapon Day Optic (S.D.O.) with R.A.R. and LaRue Tactical quick detachable mount

Long (1.1 inch) quad one-piece Picatinny free floating rail system (FRFS) with AM MambaBall covers (tan dark earth or black color)



CUTAWAY VIEW OF M27 OPERATING SYSTEM

The M27 uses an HK proprietary gas system instead of the normal gas impingement system (gas tube) used by the M4/M4A1. The HK system employs a piston driving an operating rod to control the function of the bolt, preventing propellant fouling from entering the weapon's interior. This increases the reliability of the weapon, reduces operator cleaning time, minimizes wear transfer to the bolt and barrel, and lessens wear and tear on critical components.

Quick adjustable two-point sling allows for a variety of carry and shooting positions

Knights' Armament Company 600 meter front sight (Micro/BUIS- backup from sights)

U.S. style bayonet lug/interface

HK barrel has a service life of a minimum 15,000 rounds

Knights' Armament Company 600 meter rear sight (Micro/BUIS- backup from sights)

Vertical "broomstick" foregrip

30-round aluminum U.S. military magazine, HK steel and other magazines optional

AN/PQ-16 Integrated Pointer Illuminator Module (IPIM) and accessories can be easily mounted on the Free Floating Rail System

M16 style flash hider installed on 16.5 inch chrome-lined cold hammer forged barrel

Harris-LaRue Tactical 9-13 inch quick detachable bipod

M27 with Blue Force Gear Sling and VCS Ring installed (stock removed)

M27 Infantry Automatic Rifle Accessories

The M27 Infantry Automatic Rifle is equipped with the following accessories: Knight's Armament Company Flip-Up Front and Rear Sights, Blue Force Gear VCS Sling & Rail Mount, A.L.M. MambaBall Covers, Harris/LaRue Tactical Bipod with Quick Detach or GripPod, U.S.-style Blank Firing Adaptor, (BFA), Oils, Cleaning Kit, U.S. government 30-round magazine (HK magazines optional), Trijicon Squad automatic weapon Day Optic (S.D.O.), and USMC bayonet.

A.L.M. MambaBall Covers

Blue Force Gear 2-point VCS sling & sling of mount

16x Optic Day Group (in sight, BUIS)

USMC bayonet and sheath

Oils, Cleaning Kit

M27 Manual

Trijicon ACOG 3.5x35S S&W Sight and Adapter (S.D.O.)

AN/PQ-16 Integrated Pointer Illuminator Module (IPIM)

30-round magazine (U.S. government, optional HK steel magazine)

Vertical "broomstick" foregrip

Harris/LaRue Tactical Bipod with Quick Detach or GripPod

Blue Force Gear 2-point VCS sling & sling of mount

A.L.M. MambaBall Covers

U.S. style bayonet lug/interface

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M27 Infantry Automatic Rifle 5.56 mm x 45

The M27 Infantry Automatic Rifle is a variant of the HK416. The HK416 was originally developed by Heckler & Koch for U.S. special operations forces as a major product improvement of M4/M16-type carbines and rifles. Using the HK-proprietary gas piston system found on the company's G36 rifle, the HK416 prevents propellant gases and carbon from fouling the weapon's interior, making it the most reliable of any M4/M16 type weapon.

During the last decade, the HK416 has been combat-proven in Southwest Asia and has also gained the attention of military, law enforcement, and security users outside of the U.S. In April 2007, the HK416 was selected as the new Norwegian Army rifle.

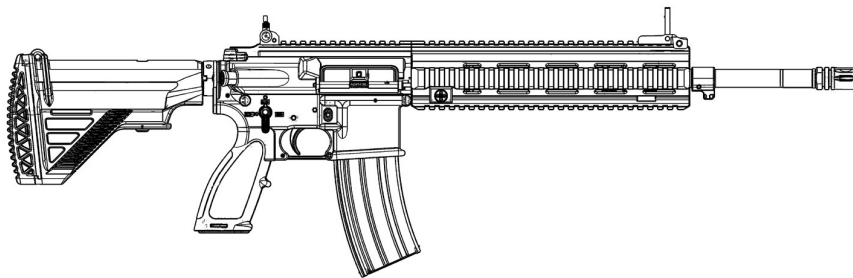
The HK operating system, as well as other improvements made to various components and parts ensure reliability and performance in all scenarios, with all types of ammunition, with all barrel lengths, and with and without sound suppressors attached. An innovative free-floating four-quadrant rail system/handguard designed by HK allows all current accessories, sights, lights, and aimers used on M4/M16-type weapons to be fitted to the HK416. This HK rail system handguard can be installed and removed without tools.

The HK416 uses barrels produced by Heckler & Koch's famous cold hammer forging process. The highest quality steel is used in this unique manufacturing process producing a barrel that provides superior performance with minimal degradation of accuracy and muzzle velocity even after thousands of rounds are fired.

Many HK416 variants also have "OTB" (over-the-beach) features and can be safely fired after being submerged in water and not completely drained. In addition to the improvements in the baseline weapon, HK has produced corrosion resistant steel and polymer magazines and a proprietary buffer to further enhance functional reliability.

M27 EQUIPPED OR INTEGRATED AT SERVICE LEVEL WITH:

- KNIGHT'S ARMAMENT CO. 600 METER MICRO/BACKUP IRON SIGHTS
- BLUE FORCE GEAR SLING RAIL MOUNT & VCAS SLING
- AIM MANTA RAIL COVERS
- HARRIS LARUE TACTICAL BIPOD WITH QUICK DETACH OR GRIPOD
- U.S.-STYLE BLANK FIRING ADAPTOR (BFA)
- OPERATOR'S MANUAL
- OTIS CLEANING KIT
- U.S. GOVERNMENT 30-ROUND MAGAZINES (HK MAGAZINES OPTIONAL)
- TRIJICON SQUAD AUTOMATIC WEAPON DAY OPTIC (S.D.O.)
- USMC BAYONET



TECHNICAL DATA	
NSN	1005-01-579-5325
Manufacturer	Heckler & Koch / HK416 variant
Caliber	5.56 NATO (.223 Caliber)
Length	33.5–37.5 inches
Weight	8.16 pounds (weapon only) Approximately 12.67 pounds (weapon, 30-round loaded magazine, accessories including: iron sights, SDO-optic, PEQ-16, VCAS sling, QD 9-13" bipod, vertical foregrip, and rail cover set)
Barrel	16.5 inches, cold hammer forged with bayonet lug
Rifling	1 in 7 inches, right-hand twist, 6 grooves
Sights	As assigned by USMC — Knights Armament Company 600 meter backup iron sights (BUIS)
Optic	As assigned by USMC — Trijicon S.D.O., 3.5 x 30 mm, 100 - 1,000 meter reticle with quick ranging feature and close range Ruggedized Miniature Reflex (RMR)
Rail system	1-piece quad (M1913 Picatinny) Free Floating Rail System / 11" length
Buttstock	6-position adjustable with storage space
Operation	Air-cooled, gas operated, short stroke piston driven operating rod, firing from a closed bolt
Selector	Safe, Semi, Automatic / Ambidextrous
Magazine	30-round U.S. government magazines (HK magazines optional)
Muzzle velocity	Approximately 2,900 FPS (with M855 ammunition)
Rates of Fire	Cyclic: Approximately 700-900 RPM Sustained: Approximately 36+ RPM Semi: Approximately 45 RPM Automatic: Approximately 90+ RPM (3-5 round burst)
Accuracy	Test guns with 15,000 rounds have fired 2 MOA with M855 ammunition
Single fire	Single fire: Less than 4 MOA (averages 2.5 MOA with M855 ammunition)
Automatic fire	Less than 8 MOA with 5-round burst (averages 5.5 MOA with M855 ammunition)
Graduated Range	Iron sight graduated effective range: 600 meters Optic graduated effective range: 1000 meters
Maximum range	Approximately 3,545 meters
Barrel life	15,000 rounds minimum
Parts life	10,000 rounds minimum
Other	Equipped with "Over the beach (O.T.B.)" features and other enhancements

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