**Weapon System, M41**

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**M41A Specifications**

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| **Operation** | **Caliber** | **Cyclic** | **Length** | **Barrel Length** | **Weight Loaded** | **Capacity** | **Max. Eff. Range** | **Max. Range** |
| Rotating breech, electronic pulse action | 10mm x 24 Caseless | 900 rpm | 69.5 cm (84 cm w/ stock extended) | 24.7 cm | 4.9 kg | 95-99 rds. | 500 m | 1,500 m |
| Gas operated, electronic primed | 30mm x 71 grenade | 15 rpm | part of rifle | part of rifle | 1.75 kg standalone | 4+1 rds. | 30 m | 180 m |

The [M41 Pulse Rifle](http://en.wikipedia.org/wiki/M41A_%22Pulse_Rifle%22) is an air cooled, electronic pulse action, selective-fire automatic rifle. The M41 is designed as a modular weapon that can fire the [caseless M3xx family of 10mm x 24 high explosive light armor piercing rounds](http://uscmc.wikispaces.com/munitions) and high-velocity 30mm grenades.

Armat produce the M41 in three basic variants: the lightweight automatic assault rifle (with integral 30mm slide-action grenade launcher), the lightweight sniper rifle, and the heavy automatic battle rifle with unique high capacity L-shaped magazine. A universal T-bracket enables no-tools mounting of passive electro-optic, thermal imaging and laser range finding weapon sights to carry handle/sighting rail. It has been the standard longarm of the Colonial Marine Corps since the mid-60s.

In operation the Pulse Rifle operates on the electronic pulse action principle. The system uses a primer, electronically-fired at 17.5 volts. +/- 2 volts, the upper and lower limits preventing fire from either stray currents or static electricity. The direct electrical firing eliminates the mechanical delays associated with a striker and the possibility of jams with an extraction system, allowing for high sustained rates of fire. An LED counter on the receiver above the magazine well provides a visual record of rounds remaining. Electrical power for the rifle is provided by an internal Polymer Ion power cell which has a runtime life of 10,000 firings and can be recharged from the ports built into all rifle racks or weapon lockers.

The ammunition used is caseless i.e. without a cartridge case to contain the propellant. Instead, the projectile is encased in a solid molded block of Nitramine 50 (a nitrocellulose-based compound which is highly inert with a high ignition temperature to prevent cookoff), making it more compact that a full-length rifle round. This allows more ammunition to be carried for the same weight as conventional types, maximizing logistics. Additionally, because the projectile doesn't have to be designed to fit a case (as the propellant telescopes around it), it can be of an aerodynamic shape optimized for its speed, accuracy and penetration.

To further reduce space and logistic loads the propellant block of the caseless round has a square base to fit the polygonal breech, chamber and barrel assemblies. This allows for tighter packing of ammunition in a box magazine, maximizing the space used when compared to the gaps between cylindrical cartridges in a conventional magazine.

The stresses placed on the breach, chamber and barrel are much greater than seen with conventional cased gun types. As such, these components are made from steel coated with a layer of vapor-deposited carbon crystal, which both strengthens and acts as a heatsink.

An additional component to the M41A Pulse Rifle is the undermounted M92A PN Grenade Launcher, which is a
gas-operated, electronically primed, slide action repeating grenade launcher.

**M41 Pulse Rifle**

Based on the Harrington Automatic Rifle of the early-60s. The carbine-style pulse rifle still equips garrison and security Marines.

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| **Model** |  |
| **Manufacturer** | Armat [Battlefield](http://uscmc.wikispaces.com/m41##) Systems |
| **Service Entry** | 2165 |
| **Operation** | Rotating breech, electronic pulse action |
| **Construction** | Titanium aluminide alloy stampings and polymer furniture |
| **Weight loaded** | 3.6 kg |
| **Sights** | Rear leaf and blade foresight built into handle |
| **Magazine Capacity** | 99-95 rounds U-bend conveyor detachable box |
| **Ammunition** | Caseless ball (point-detonating high explosive light Armour piercing) |
| **Modes of fire** | Secure, single, burst (4-round), automatic |
| **Cylic rate** | 900 rpm |
| **Maximum effective range** | 500 meters |
| **Description** | Replacement for the 6.5mm M63 Pulse Rifle. Fires heavier 10mm telescoped caseless ball round |

**M41A1 Pulse Rifle**

The standard longarm of the United States Colonial Marine Corps.

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| **Model** |  |
| **Manufacturer** | Armat Battlefield Systems |
| **Service Entry** | M41A: 2171, M41A1: 2176 |
| **Operation** | Rotating breech, electronic pulse action/gas operated, electronically primed |
| **Construction** | Titanium aluminide alloy stampings and polymer furniture |
| **Weight** | 4.9 kg loaded; 3.2 kg empty, 1.5 kg magazine, 0.2 kg sling |
| **Sights** | Rear leaf and blade foresight built into handle |
| **Magazine Capacity** | 99-95 rounds U-bend conveyor detachable box, 4 grenades internal magazine (hand pumped) + 1 in the chamber |
| **Ammunition** | Caseless ball (point-detonating high explosive light Armour piercing), separating rim grenades (HE-FRAG, WP, HEAT, HEDP, HEAB, HEI, canister, baton) |
| **Modes of fire** | Secure, single, burst (4-round), automatic |
| **Cylic rate** | 900 rpm/15 rpm |
| **Maximum effective range** | 500 meters/30 meters |
| **Description** | Combination weapon system comprising an air-cooled electronic pulse action automatic rifle and the M92A PN undermounted slide action grenade launcher. M41A1 is product improved model |

**M41AE2 Heavy Pulse Rifle**

Squad automatic weapon, designed to enhance the firepower of rifle teams. Barrel is replaceable with no-tools quick change.

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| **Model** |  |
| **Manufacturer** | Armat Battlefield Systems |
| **Service Entry** | 2179 |
| **Operation** | Rotating breech, electronic pulse action |
| **Construction** | Titanium aluminide alloy stampings and polymer furniture |
| **Weight loaded** | 5.75 kg |
| **Sights** | Rear leaf and blade foresight built into handle, AN/RVS-52 CCD TV Sight |
| **Magazine Capacity** | 300 rounds L-shaped conveyor detachable box |
| **Ammunition** | Caseless ball (point-detonating high explosive light Armour piercing) |
| **Modes of fire** | Secure, single, burst (4-round), automatic |
| **Cylic rate** | 650 rpm |
| **Maximum effective range** | 500 meters |
| **Description** | M41 action with longer 18” replaceable heavy barrel (HBAR), fixed polymer stock, heat shield and folding bipod. Compatible with powered and unpowered tripods and light vehicle pintle mounts |

**M41A2 Pulse Sniper Rifle**

Entry and one-shot takedown weapon with high first round probability to hit. Designed for equipping reconnaissance Marines and designated markspersons.

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| **Model** |  |
| **Manufacturer** | Armat Battlefield Systems |
| **Service Entry** | 2172 |
| **Operation** | Rotating breech, electronic pulse action |
| **Construction** | Titanium aluminide alloy stampings and polymer furniture |
| **Weight loaded** | 4.1 kg |
| **Sights** | Rear leaf and blade foresight built into handle, AN/RVS-52 CCD TV Sight |
| **Magazine Capacity** | 99-95 rounds U-bend conveyor detachable box |
| **Ammunition** | Caseless ball (Match-grade point-detonating high explosive light Armour piercing) |
| **Modes of fire** | Secure, single, burst (4-round), automatic |
| **Cylic rate** | 900rpm |
| **Maximum effective range** | 900 meters |
| **Description** | M41A1 platform minus M92A PN undermount, manufactured to higher production standards to fire commercial Match quality ammunition |