

# The Mil-Bots-The Military Robots

Vishal Sharm; Tarun Yadav & Rahul Yadav  
B.tech (Computer Science & Engineering)  
Dronacharya College of engineering (Gurgaon)  
Jhajjar(Haryana), INDIA

[vii2.sharma@gmail.com](mailto:vii2.sharma@gmail.com); [taruny425@gmail.com](mailto:taruny425@gmail.com) & [hirahul93@gmail.com](mailto:hirahul93@gmail.com)

## Abstract—

*Now a days, many military organizations take the help of military robots to take risky jobs. These robots used in military are usually employed with a synchronized system, including video screens, sensors, gripper and cameras. The military robots also have different shapes according to the purposes of each robot. In other words, these robots have helped military organizations in many ways. No Soldier actually fears Death but the sacrifice of his/her precious life is above all because it is them who protects us.*

## Introduction

As the advancements in the field of technology, scientists and researchers came up with the invention of robots. These robots help to make human life much easier especially in life threatening areas. The military of each nation protect their nation's people but being human their life is also endangered in war situations. Hence, one of the concern areas of focusing the human tech mind is towards military. Military robots are used to take the risky job which is unpredictable and life threatening to be handled manually by human. These robots take the job as the assistant of a soldier.

In other words, these robots have helped military organizations in many ways. No Soldier actually fears Death but the sacrifice of his/her precious life is above all because it is them who protects us.

## Objective:

This team aims to describe about the latest technology in the world which not only helps the common people but also some other aspects of the country. These robots are basically designed to reduce the risk of loss of life of the army men that are always there for us. Hence these robots are designed with a coordinated system that implies video screens and other measures to make a robot, act like a complete human intelligence. Hence the main objective behind our study is to show how crucial the life of our soldiers is and what role does the technology play in their lives.

## History behind Invention

The history of military robots can be traced back to the times of World War II. During the time of World War II and the Cold War, these robots were in the form of German Goliath tracked and Soviet teletanks. It is also believed that military robots history can be dated back to the 19<sup>th</sup> century, precisely in 1898. The history begins with the invention of radio controlled boat intended for military use by Nicola Tesla.



The next important step that gives a turning point in the history of military robots was in 1930-ties in the Soviet Union. Soviet Union made a remote controlled tank called as 'Teletank'. Later on the tank's control system was modified and to control the tank electric relays and radio signals were used. Depending on weather and other conditions teletank could be controlled from 500-1500m away. The teletanks were equipped with DT machine guns, flamethrowers and smoke container to provide a smokescreen.

This is the history behind military robots.

### Development Of Military Robots

When we look into the history of military robots, we come to know that the use of robots begins from the time of World War II. So far there has been a huge development of military robots. At present, most of the military organizations use military robots to take risky jobs which are difficult to be handled manually by soldier. The development of advanced technology has led to the development of robots in military too. Today's military robots usually employ the integrated system which includes video screens, sensors, gripper and cameras.

In the development of military robots, we can consider about US Mechatronics which has created or developed a working automated sentry gun and is presently developing it further for commercial as well as military use. As far as military robots development is concerned, we cannot forget MIDARS which is a four-wheeled military robot. This robot is outfitted with many cameras, radar, and a firearm that performs arbitrary patrols around a military base or other government installation

automatically.



MIDARS alerts human over looker when it tracks down movement in unauthorized areas, or other programmed conditions. This military robot can also scan radio frequency. The information on the development of military robots also reveals that US scientist at MIT is further looking to make a mechanical super-fighter, which has the ability to heal its own wounds, leap buildings, deflect bullets and even become "*invisible*" which will not be ready for at least ten years.

The program was part of a \$26 million Pentagon program to develop software for autonomous systems.

In a nut shell, we can say that the development of military robots has come a long way. And it does not seem to stop here.

### Current Use Of Military Robots

Today, almost all the military organizations take the help of military robots to carry out many risky jobs that cannot be handled manually by soldier. We have also seen a great development in military robots when compare to military robots in earlier time. At present, different military robots are utilized by many military organizations. Here, in this article we will discuss about the current use of military robots and its different kinds.

Given here is a brief description on the present use of military robots:

**Daksh** – Daksh is one of the most current military robots. It is an electrically powered and remote controlled robot which is used to locate, handle and destroying risky objects safely. The main role of this military robot is to recover improvised explosive devices. In short it is a vehicle for defusing bombs. The current use of military robots like Daksh has helped military organization in many ways. This robot can even climb stairs to reach risky materials. Moreover, it can also scan objects using its portable X-ray device.



**Goalkeeper** – As far as the current use of robots in military is concerned, we cannot leave behind Goalkeeper. This military robot is a Dutch close-in weapon system that helps to defend ships from incoming missiles as well as ballistic shells. This system generally comprises of auto cannon and advanced radar that tracks incoming fires. It is an automatic system that can also be deployed to protect airfields.

### How Military Robots Work?

Most of the military organization now takes the help of robots to carry out many risky jobs that cannot be done the soldier. These robots are a great help for military organizations. But one might often arise with the question how military robots work? And in what ways these robots help the military organization. Here, we will let you know about the different categories of military robots and how they actually work.

Let's know how military robots are categorized and also find out the working of military robots. Military robots are categorized as:

**Unmanned Aerial Vehicles (UAV)** - These military robots are basically designed for the missions of surveillance and reconnaissance.

**Small Unmanned Ground Vehicles (UGV)** – These robots are capable of entering hazardous or dangerous areas and can collect information without risking the lives of soldiers.

**Multifunctional Utility/Logistics and Equipment (MULE)** – These military robots are especially designed to provide combat support in conflict scenarios.

**Armed Robotic Vehicles (ARV)** – These robots are capable of carrying powerful weapons and sophisticated surveillance equipment.

As far as the working of military robots is concerned, the MULE and ARV vehicles mark the beginning of a new type of warfare. MULE has three proposed versions, which roll around on wheels. Two of them can carry more than a ton of equipment. The other vehicle is especially designed to detect and disable anti-tank landmines.

The other kind of robot, i.e. ARV robots are more like tanks. In fact they are less like soldiers. These military robots are mainly used as support for manned vehicle missions. For instance the commander can use these robots to extend his team's area of influence without the need for more soldiers. These robots can take the most dangerous positions as well as provide support whenever the manned vehicles enter a combat situation.

### Military Robots Today

When we consider military robots today, there has been a huge development as compared to those robots used in earlier times. Today, military ground robots & unmanned vehicles are used worldwide..



At present the most commonly used military robot is the unmanned aerial vehicle IAI Pioneer and RQ-1 Predator. These robots can be armed with Air-to-ground missiles.

The present military robots are automating military ground systems. These robots permit vital protection of soldiers and people in the field thus making the possibility of minimized fatalities. Today's mobile operates independently of the operator. Today's military robots have great advantages.

Military robots today employed with the integrated system, including video screens, sensors, gripper and cameras. There are also military robots that are equipped with the weapon that can detect and protect themselves from any dangerous obstacles. Military robots have variety of shapes depending on the purpose of each robot. One of the most common military robots is the car robot. For a witness job, it is a little car or may be generally tanks that can be the target location. One of the other military robots which are often used by the military organization is the airplane robot.

Today's military robots such as airplane robot have the capacity of flying automatically to do the required job. These military robots are specially designed that can resist from shot or explosion. It is believed that scientists will produce much better military robots for the security upgrading. Robotics is more advanced in their training and in the tools available to create units. Military robots today save lives. Defense security systems have an emphasis on causality reduction during combat. This has resulted in investment in robotics technology that is useful. Robotic research is on the fast track for government spending today. It can be said that

military robot automation of the defense process is the next wave of military evolution

## Military Robots by different countries

**\*By**

**India:**

With futuristic warfare in mind, India is working to develop robotic soldiers as part of efforts to boost unmanned fighting capabilities, joining a select group of countries in this endeavour. Under the project being undertaken by DRDO, robots would be developed with very high level of intelligence to enable them to differentiate between a threat and a friend. These can then be deployed in difficult warfare zones, like the Line of Control (LoC), a step that would help avert the loss of human lives.

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**USA:**

The Army is looking to slim down its personnel numbers and adopt more robots over the coming years. The biggest surprise, though, is the *scale* of the downsizing the Army might aim for. At the current rate, the Army is expected to shrink from 540,000 people down to 420,000 by 2019. To keep things just as effective while reducing manpower, the Army will bring in more unmanned power, in the form of robots. IAI Pioneer: At present the most commonly used military robot is the unmanned aerial vehicle. These robots can be armed with Air-to-ground missiles.

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**Russia**

For the first time, Russia's armed forces have conducted war games with the participation of new combat robots. In the course of the exercises by the Baltic Fleet, which took place in mid-June near Kaliningrad, the robotic combat platforms, armed



with grenade launchers and Kalashnikov rifles, saw their first action, executing their military missions alongside their live colleagues.

**Wall-e:** The Platform-M is a remote controlled robotic unit on a crawler and externally it resembles the protagonist of the 2008 Pixar computer animation WALL-E.

**\*By**

**Germany**

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## **Military Robots in news**

Robots that can kill people aren't science fiction anymore: they're reality. Russia has deployed armed robots, different from drones because they can select targets and decide to fire on them without any human input, to guard its missile bases. Russia wants to expand its robotic capabilities considerably, and it's likely several other countries do as well. We're slouching towards a future where robots play a frontline role in combat.



The armed robots issue is becoming so real, so fast, that 87 countries sat down at a United Nations-convened conference from May 13th to the 15th to discuss banning the things. Those nations, including Russia, China, and the United States, discussed amending the UN Convention on Certain Conventional Weapons, which 117 countries have accepted, to prohibit the use of armed robots during wartime. A lot of the news coverage on this issue has treated robot arms control as if it's a joke or a novelty. It's neither: For over a year, Human Rights Watch has been building a campaign to pressure for banning military robots, arguing that they pose an unacceptable threat to civilian populations. Are they right? Should we be banning what HRW calls "killer robots"?

The debate about robots in warfare comes down to the question of whether they would make war crimes more or less likely. There are serious arguments on either side. In many ways, this new argument about robots is an extension of much older argument about why war crimes happen and how to prevent them. This isn't a joke anymore: the debate over military robotics is about preventing horrific abuse of real people. Robotics advances in small steps: automated systems designed to shoot down missiles and homing torpedoes are semi-robotic. As technology like that advances, we'll get a better sense of whether robots will be safe for war zones.

## **UN on banning military robots**

"Killer robots" have left Hollywood and entered international politics. For the first time, world leaders who are increasingly



concerned with a real-life "rise of the machines" are meeting this week to consider banning the use of fully autonomous weapons in warfare.

For four days beginning on Tuesday, the U.N.'s Convention on Certain Conventional Weapons in Geneva, Switzerland, will hear testimony from representatives of its 115 member states on whether or not military robots should be allowed to select and take down their targets without direct human intervention. The multilateral talks come at a time when the international community seeks to prohibit robotic weaponry on the battlefield.

"I urge delegates to take bold action," Michael Moller, acting director-general of the United Nations' office in Geneva, told attendees, according to a UN statement. Foreign Affairs notes that in South Korea, for instance, military personnel use surveillance robots that detect targets along the border it shares with North Korea using infrared sensors, and these robots have an automatic feature that allows them to independently fire a machine gun.

Then there's the U.S. Navy's Phalanx gun system, which can seek out enemy fire and destroy incoming objects completely on its own.

Other countries pioneering the design and use of autonomous weaponry include Britain, Israel, China, Russia and Taiwan.

Some argue that U.S. military drone strikes, which have killed 2,400 people as of Jan. 2014, are a form of robotic weaponry.

However, drones are operated, albeit remotely, by trained human pilots. The current debate boils down to whether humans should empower robots to kill without a human ordering them to do so each time. In essence: Should a robot decide who lives and who dies?

"Killer robots would threaten the most fundamental of rights and principles in international law," Steve Goose, arms division director at Human Rights Watch, an international non-governmental organization, told the AFP. "We don't see how these inanimate machines could understand or respect the value of life, yet they would have the power to determine when to take it away."

Earlier this week, Human Rights Watch published a report that examines how fully autonomous weapons could impact human rights law, "such as upholding the principles of distinction and proportionality."

The increasing deployment of gun-toting robots by the U.S. military and other armed forces around the world could end up endangering civilian lives and giving terrorists new ideas, warns a U.K. robotics professor.

The U.S. Department of Defense (DoD) has outlined plans to ramp up the use of remotely controlled robotic vehicles on land, undersea and in the air. The goal is to field increasingly [autonomous robots](#)—without a human controller—to dispose of explosives, stand guard and spot targets to attack. Nations such as South Korea and the Republic of South Africa have also begun adopting armed robotic systems.



The prospect of armed, autonomous robots is enough to rattle Noel Sharkey, professor of computer science at the University of Sheffield, England. "One of the fundamental laws of war is being able to discriminate real combatants and noncombatants," he says. "I can see no way that autonomous robots can deliver this for us." Even today's unmanned air and ground vehicles could do harm, he cautions, by teaching insurgents new ways to mount devastating attacks from a safe distance.

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