

Patriot missile defense system

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Why in news?

- Recently, the Biden administration said it would provide another \$1.85 billion in military aid to Ukraine, including the Patriot air defense system.
- Ukraine is fighting a war with Russia and it needs such defence system to protect itself from incoming missiles.

Background

- Russia had launched its invasion of Ukraine on February 24, 2022.
- 10 months later, it is still raging with surprisingly high-performing Ukrainian troops maintaining the offensive pressure against the Russians on the frontlines in the east and the south.
- In recent months, Ukraine took back swathes of territories it had lost to the Russians in the early stages of the war.
 - This includes parts of Kharkiv Oblast in the northeast and Kherson in the south.
- Military and financial support from the West, particularly the United States, has been critical in Ukraine's successful counteroffensive.

What is Patriot system?

- The Patriot, which stands for Phased Array Tracking Radar for Intercept on Target, is a theater-wide surface-to-air missile defense system.
- It has been built by Raytheon Technologies Corp and is considered one of the most advanced air defense systems in the U.S. arsenal.
- The system was first used in combat during the 1991 Gulf War, with batteries protecting Saudi Arabia, Kuwait and Israel, and later used during the U.S. invasion of Iraq in 2003.

What are the features of Patriot system?

- It is a mobile system that usually includes powerful radar, a control station, a power generator, launch stations and other support vehicles.
- The system has different capabilities depending on the type of interceptor used.

- The PAC-2 interceptor uses a blast-fragmentation warhead, while the newer PAC-3 missile uses more advanced hit-to-kill technology.
- As per NATO, the system's radar has a range of over 150 km (93 miles).

How widely is the Patriot system used?

- Raytheon has built more 240 Patriot systems and they are currently used by 18 countries, including the United States.
- The system has been in high demand in the Middle East because of the threat posed by Iran to the region.
- According to Raytheon, the system has intercepted more than 150 ballistic missiles in combat since 2015.

How will the Patriot missile system help Ukraine?

- The Patriot system is designed to intercept threats like aircraft and ballistic missiles.
- It can also shoot down the "kamikaze" drones Russia has frequently sent to hit Ukrainian critical infrastructure. But it would be an extremely expensive way to destroy drones that only cost thousands of dollars.
 - Kamikaze drones are small unmanned aircraft packed with explosives that can be flown directly at a tank or a group of troops that are destroyed when it hits the target and explodes.
 - Unlike drones that return to base once missiles are launched, kamikaze or suicide drones are destroyed in an attack.
- Analysts believe that while the Patriot system is likely to save lives from incoming missiles, it probably won't change the trajectory of the nearly 10-month conflict since it is a defensive system.

Q1) What is the difference between THAAD and Patriot?

Both missile systems are designed to shoot down incoming ballistic missiles. Patriot missiles are designed to hit smaller, lower-altitude weapons, while the newer THAAD systems are designed to combat higher-flying, medium-range missiles.

Q2) What is a kamikaze drone?

Kamikaze originates from Japanese military pilots who flew suicide missions during World War II to strike Allied naval vessels. This unmanned triangular drone is known to loiter in the air until it determines its target, and then it quickly lowers itself to the ground and detonates.

Source: [Patriot system | America's missile defence umbrella](#) | [The Economic Times](#) | [ABC News](#) | [The Hindu](#)

Source: <https://www.youtube.com/watch?v=AFMG6H8hw-M>

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