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India Unveils Its 'Robot' Tank: Could It Be a Game Changer?

By Michael Peck

India has unveiled an unmanned armored vehicle—and it's a big one.

While many military robots look like toys or little NASA Mars rovers, the Muntra is a full-sized armored vehicle. The Indian press refers to the Muntra as a "tank" and somewhat resembles a Russian BMP armored personnel carrier. It's unarmed for now, but does come in three versions: surveillance, mine clearing and operating in nuclear- or chemical-contaminated zones.

The new vehicle was designed by the Combat Vehicles Research and Development Establishment, part of India's Defense Research and Development Organization (DRDO), which displayed the Muntra at a recent exhibition.

The DRDO Web site describes the Muntra as the "the first unmanned tracked vehicle from DRDO." The UGV, or unmanned ground vehicle, "has a very diverse range of technologies and systems incorporated in it, including electro-optics, sensor fusion, electro-mechanical actuators and communication systems."

The Muntra also has "dynamic power management" to optimize power usage—though the power source and engine aren't described—and an Indian-developed geographic information system for navigation. In addition, "various failsafe mechanisms are incorporated in the Muntra UGV to ensure safe and error-free operations."

The *Times of India* said the Muntra "has been tested and validated at Mahajan field firing range in Rajasthan under dusty desert conditions where temperatures touched 52 C (125.6 Fahrenheit). The Army comfortably tele-operated the vehicle. It has surveillance radar, an integrated camera along with laser range finder which can be used to spy on ground targets 15 kilometers (9.3 miles) away."

Neither DRDO nor Indian media have stated that the Indian military will purchase or field the Muntra, though the *Times of India* noted interest on the part of Indian paramilitary forces engaged in a long, bloody struggle against Maoist Naxal insurgents. "That will require a few modifications," the news site added.

What's also interesting is the path that India has taken by opting for a full-sized unmanned armored vehicle. For clearing minefields, a tank-sized vehicle might offer advantages in survivability and in the ability to carry mine-clearance equipment. Russia, for example, has developed the Uran-6, a bulldozer-sized vehicle for mine clearance and explosive ordnance removal.

The downside is that big vehicles are expensive for such a hazardous mission as mine clearance, compared to smaller robots such as a modified Husky UGV. For surveillance missions, a smaller vehicle might carry fewer or less powerful sensors, but it would also be less easy to detect and more able to operate in congested terrain such as narrow streets or forests.

Perhaps more importantly, there is no suggestion that the Muntra can function with any degree of autonomy. It's a remote-controlled surveillance and engineering vehicle. The next generation of tanks, like the next generation of combat aircraft, may very well be unmanned. This will require an entirely new level of sophistication.



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India to Deploy Two Ballistic Missile Defense Systems near Pakistan Border

The ballistic missile defense grid that will protect the western and northern regions of the country will help guard New Delhi and Mumbai.

New Delhi (Sputnik) — India has decided to install its homemade ballistic missile defense systems at two villages in the western state of Rajasthan. The villages in Alwar and Pali are both less than 800 kilometers from the Pakistani capital Islamabad.

The counter attack missiles will be able to provide double layered security with the capacity to shoot down enemy missiles both within the earth's atmosphere (endo-atmospheric) and outside it (exo-atmospheric). State owned Defense Research and Development Organization (DRDO) had conceived the programme in 1999 and since then, the programme has witnessed many trials and upgrades.

The ready version consists of long-range tracking radar developed in partnership with Israeli company Elta. The second component is a computerized command and control system that plots and predicts the intruding missile's flight path and assigns interceptor missiles to destroy it. The third component is the interceptor missiles and includes the endo-atmospheric missile can intercept incoming targets at an altitude of 15 to 25 kilometers and the exo-atmospheric missile can kill an incoming ballistic missile within the range of 2000km. DRDO has claimed that the strike range of the exo-atmospheric missile is being upgraded to 5000 km.

Some more tests will be conducted in the coming months before the system is commissioned into the Indian armed forces. The latest successful tests of the endo-atmospheric as well as exo-atmospheric interceptor missiles were conducted in March this year. "The complete event including the engagement and destruction was tracked by a number of electro-optical tracking systems using infrared imagery. The launch has proved the Ballistic Missile Defence (BMD) prowess of the country," DRDO had claimed on March 1 this year.

With this capability, India has now entered the elite league of nations having this capability. The other four countries are US, Russia, Israel and France. India's decision to install the advance ballistic missile system near its border with Pakistan stems from the fact that the two nuclear-armed neighbors are engaged in a prolonged territorial dispute and have gone to war three times after their partition in 1947.