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Indigenously developed protective covering for T-72 tanks of Indian Army

PUNE: As many as 2,500 T-72 tanks of the Indian Army will soon be equipped with an indigenously developed protective covering to ensure safety from enemy tank fire. Top Defence Research and Development Organisation (DRDO) officials told TOI on Friday that the tanks will be equipped with the advanced version of Explosive Reactive Armour (ERA) Mk-II for effective protection. "Besides, the will also result in saving of huge foreign exchange," they said.

Presently, the T-72 tanks of the Indian army are fitted with ERA Mk I. To get better protection for the tanks, the Indian Army had put forth its demand for advanced version of the ERA in 2010 to the DRDO.

The development of ERA Mk-II was thus undertaken by the DRDO in 2011 with city-based High Energy Materials Research Laboratory as a nodal lab in association with the Combat Vehicles Research and Development Establishment and the Defence Metallurgical Research Laboratory.

The DRDO officials said the user trials of the ERA Mk-II were carried out in four phases from November 2015 to January 2016. "During these trials, ERA Mk-II was evaluated against 84mm heat, 125mm heat, Milan warhead and AMK- 339 ammunition," they added. The officials said, "With improved explosive properties and armour materials, the performance of ERA Mk-II against shaped charge warheads and kinetic energy projectiles was excellent and better than ERA Mk- I."

"Army officers have also evaluated various performance parameters, like mobility, turret traverse, gun stabilisation among others as per the trial directives. All the requirements were met during the user evaluation," the officials added. A top DRDO official, who did not wish to be named, told TOI, "Adaption of ERA Mk-II will significantly enhance the protection level of tanks. Thus, the Army wants advanced version for T-72 first and they will equip this system to their T- 90 and Arjun MK-II in the near future."

The official said the weight of reactive panel is similar of ERA MK- I. It means, it will not put any additional weight on the tank. Commenting on ERA's role, a senior army officer said, "The main task of the ERA is to reduce the penetration of shaped charge warheads and KE projectiles, thereby, ensuring the non-perforation of tank armour and protection of the crew within. Positively, the newly developed ERA has achieved all necessary requirements during the trials."

The DRDO aims to start the mass production of the ERA after Transfer of Technology (ToT) to private defence manufacturers. "We will complete the process once we finalise manufacturers in the next few months," sources from the DRDO said.

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Eye on China, India to base first squadron of Rafale fighter jets in Bengal

New Delhi: India will base its first squadron of Rafale fighter jets , which are also capable of delivering nuclear weapons, in the eastern sector as part of the overall policy to gradually build nuclear as well as conventional deterrence against China.

With Sukhoi-30MKI fighters already operating from Tezpur and Chabua in Assam, the IAF has now finalised plans for the first 18 Rafales to be stationed at the Hasimara airbase in Bengal from late-2019.

This comes at a time when India is also conducting final trials of the nuclear-capable Agni-IV and Agni-V ballistic missiles after the Strategic Forces Command inducted the Agni-III a couple of years ago.

Under the Rs 59,000 crore (7.87 billion euro) deal inked with France in September last year, the IAF will get 36 Rafales in batches by mid-2022 or so. With 14 India-specific requirements, including the capability for "cold start" from high-altitude regions, the Rafale packs quite a punch with its ability to carry 9.3-tonne of weapons and simultaneously perform both air defence and ground attack missions.

"The Hasimara airbase currently has MiG-27s that will be retired over the next two-three years. They will be replaced by Rafales. A team from Dassault Aviation has already visited Hasimara to review the maintenance and other infrastructure required there," said an official.

"The Sarsawa base (UP), among other places, is being considered for the second Rafale squadron.

Under the contract, Dassault has to ensure minimum 75% availability for the jets at all times under the performance-based logistics support for the first seven years, which can be extended by another five," he added. The IAF also activated the advance landing ground (ALG) at Tuting, in Arunachal's Upper Siang district, just 10 days ago. It is the sixth such ALG to be made operational in Arunachal apart from the ones in eastern Ladakh, all with an eye firmly on China.

Moreover, the Panagarh base in Bengal is also set to get its six C-130J Super Hercules aircraft. Panagarh, of course, is also going to be the headquarter of the Army's new 17 Mountain Strike Corps being raised with two high-altitude infantry divisions, apart from other armoured, artillery, air defence and engineer brigades spread from Ladakh to Arunachal.

Deterring the dragon

A) Steps being taken:

- * Nuclear-capable Agni-III (3,000-km) ballistic missile inducted into the Strategic Forces Command
- * Agni-IV (4,000-km) & Agni-V (over 5,000-km) undergoing final trials
- * Additional Sukhoi-30MKI fighters, spy drones & helicopters deployed in north-east
- * T-72 tanks deployed in Eastern Ladakh & Sikkim
- * 2 new infantry divisions (36,000 soldiers) raised at Likabali & Missamari (Assam) in 2009-2010
- * New Mountain Strike Corps (17 Corps), with HQ at Panagarh (West Bengal), to be fully raised by 2021 with 90,274 soldiers
- * 6 C-130J 'Super Hercules' aircraft to be based at Panagarh by mid-2017
- * 6 Akash surface-to-air missile squadrons being deployed in north-east
- * BrahMos supersonic cruise missile regiment to be deployed in Arunachal
- * Activated advance landing grounds in Ladakh (DBO, Nyoma & Fukche) & Arunachal (Pasighat, Mechuka, Walong, Along, Ziro & Tuting)
- * Plan to boost military force-levels & infrastructure in A&N Islands

B) Rafale fighters:

- * 36 Rafale fighters for Rs 59,000 crore (7.87 billion Euro) as per deal inked with France on Sept 23, 2016
- * 1st Rafale to come by Nov 2019. All 36 fighters by 2022
- * 1st squadron of Rafales to be based at Hasimara

Capabilities:

- * 4.5 Gen omni-role fighter
- * Can simultaneously perform both air defence & ground attack missions
- * Can deliver nuclear weapons

- * Combat range from 780-km to over 1,500-km depending on mission
- * Can carry 9.3-tonne of weapons:
- * 150-km beyond-visual range Meteor air-to-air missiles
- * 70-km range MICA air-to-air missiles
- * 300-km Scalp air-to-ground cruise missiles



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Extension for Nirbhay, panel to identify flaws

Bhubaneswar: India's own cruise missile project Nirbhay has got an extension of 18 months amid speculations over the weapon system's operational capabilities. Launched in 2004, the projected date of completion for the prestigious project was December 31 last.

At a recent review meeting, Defence Minister Manohar Parrikar gave green signal for the extension. Ministry of Defence sources said the Nirbhay team has been asked to deliver their best by June, 2018.

Under developmental trial since 2013, the missile is yet to perform as per the expectations. Of four tests in as many years, the indigenously developed weapon had failed three times though it could cover the intended range once in 2014. Meanwhile, an independent technical committee has been formed to identify faults in the system that led to failure of the missile during its fourth trial on December 21.

The probe committee led by founder director of ISRO Inertial Systems Unit Dr Nagarajan Vedachalam will not only ascertain the faults but also recommend possible measures to make the system robust.

Like in its maiden trial and third test, the missile had veered off the trajectory minutes after takeoff during the last launch and the mission had to be aborted mid-air.

An official associated with the project, however, informed that the blame game between two laboratories of Defence Research and Development Organisation (DRDO) cost the project more than the faults in the system. While Aeronautical Development Establishment (ADE), which has designed the missile, has been blaming Research Centre Imarat (RCI) for supplying defective hardware, the latter points fingers at ADE-developed software for recurring failure of the missile.

'The probe committee will ascertain which is defective, the software or hardware. It may also inspect metallurgical deficiencies,' the sources said.

Having a strike range of around 1,000 km, Nirbhay is first homegrown subsonic cruise missile project. According to DRDO, the missile can challenge weapons of its class. Nirbhay blasts off like a rocket and unlike a missile, it turns into a vehicle akin an aircraft. Flying at tree-top level, it can deceive enemy radars making it difficult to be detected. Unlike other ballistic missiles, this cruise missile has wings and distinct tail fins. After reaching near the target area, it can hover around, hitting at its will from any direction.