

Dhanush Howitzers

AFTER a minor hiccup, the Dhanush guns are now ready to be inducted into the army as six of them are going to be given to army's School of Artillery in the next three months for training new officers on the howitzer. "The guns are getting inducted into the Army and after the troops are trained, it would be deployed in operations," Lt Gen Anjan Mukherjee (retd) of the Ordnance Factory said. The Dhanush guns are being built on the technology supplied along with the Bofors guns in the 1980s from Switzerland. Recently, there was a mishap involving the ammunition of the Dhanush which caused some delay in the induction of the gun. The Army has plans of inducting 414 Dhanush guns with first batch of 114 guns placed to be inducted first.



Defence Expo begins; major military firms showcase latest weapons

India's mega defence exhibition — the DefExpo — began here on Wednesday with participation of major global and domestic military firms, which are eyeing billions of dollars of contract as part of the country's military modernisation programme.

The NDA government is trying to project the 10th edition of the event as first serious attempt to transform India—the largest importer of military platforms and weapons—into a hub of military manufacturing.



India is expected to spend close to USD 300 billion in the next five years in procuring defence equipment and almost all major global defence firms are eyeing a slice of it.

Though the four-day-long DefExpo, on the outskirts of Chennai and close to the temple town of Mahabalipuram, began today, it will formally be inaugurated by Prime Minister Narendra Modi on Thursday.

Defence Minister Nirmala Sitharaman, in a tweet, said "For the first time, India will be showcasing its defence export potential at

@DefExpoIndia." According to the Defence Ministry, over 670 defence firms, including 154 foreign manufacturers, are participating in the exhibition of weapons and military hardware. It is being attended by official delegations from over 47 countries, including the US, the UK, Russia, Afghanistan, Sweden, Finland, Italy, Madagascar, Myanmar, Nepal, Portugal, Seychelles and Vietnam.

The theme of the expo is "India: The Emerging Defence Manufacturing Hub." Major international companies, which are participating at the expo include Lockheed Martin, Boeing (US), Saab (Sweden),

Airbus, Rafael (France), Rosonboron Exports, United Shipbuilding (Russia), BAE Systems (UK), Sibat (Israel), Wartsila (Finland) and Rhode and Schwarz (Germany).

India's indigenously developed land, air and naval systems are also being showcased. The weapons and platforms being displayed include the Tejas fighter jets, advanced towed artillery gun systems (ATAGS) designed by the DRDO Arjun Mark 2 tank and Dhanush artillery guns. The DRDO's exhibits include the Nirbhay missile system with launcher, autonomous unmanned ground vehicle (AUGV), MBT Arjun Mk-I tank, Astra missile, low level transportable radar (LLTR) system, medium power radar (MPR) system and Varunastra—heavyweight anti-submarine electric torpedo.

The exhibition is spread over an area of 2.90 lakh square feet. PTI

<http://www.tribuneindia.com/news/nation/defence-expo-begins-major-military-firms-showcase-latest-weapons/572249.html>



Thu, 11 April, 2018

New WhAP Wheeled Amphibious Platform 8x8 armoured at DefExpo 2018

One of the highlight at the live demonstration of DefExpo 2018 is the new 8x8 amphibious combat vehicle called WhAP (Wheeled Amphibious Platform) developed jointly by the DRDO's Vehicle Research and Development Establishment and the Indian Company TATA Motors. The Whap is fitted with a two-man **BMP-2** turret, a Soviet-made Infantry Fighting Vehicle.



Tata Motors is the first private sector OEM in India which has developed WhAP (Wheeled Armored Amphibious Platform), an Infantry Combat Vehicle, designed for optimized survivability, all-terrain performance and increased lethality jointly with the Indian Defence Research and Development Organization (DRDO).

In recent years, Tata Motors has made a strategic

shift from the Logistic vehicles space to the Combat vehicle space by focusing on development of contemporary state-of-the-art combat vehicle platforms (Tracked & Wheeled); with the dual purpose of empowering India's Defence Forces with breakthrough technologies and increasing the nation's self-reliance in this critical area. The idea is to ensure high mobility, fire power and protection to the forces for their various missions by developing world-class armored fighting vehicles.

The WhAP with its **BMP-2** turret offers a new generation of combat vehicle offering high level of protection, mobility based on a 8x8 chassis and fire



power with the turret armed with a stabilized 30 mm cannon 2A42 and a 7.62 mm PKT coaxial machine gun mounted to the left of the main armament with 2,000 rounds. Mounted on the turret roof between the gunner's and commander's hatches is a launcher for an AT-4 SPIGOT or AT-5 SPANDREL ATGM (Anti-Tank Guided Missile) which has a maximum range of 4,000m.

The WhAP has a weight of around 25 tons and is powered by a 600 hp. diesel engine. It can reach a maximum road speed of 100 km/h. For amphibious operations, the WhAP is propelled in the water at a maximum speed of 10 km/h thanks to two hydrojets mounted at the rear of the vehicle.

http://www.armyrecognition.com/defexpo_2018_india_news_show_daily/new_whap_wheeled_amphibious_platform_8x8_armoured_at_defexpo_2018.html

FINANCIAL EXPRESS

Thu, 11 April, 2018

Defence Expo 2018 begins in Chennai; big boost for defence production under Make in India initiative

The mega exhibition began today with the participation of major international and domestic defence firms displaying their cutting-edge products. The Defence Minister said that the agenda of this defence exposition was to change India's image as an importer to India as an exporter of defence products.

Defence Minister Nirmala Sitharaman launched the DefExpo 2018 today in Chennai. Addressing the media, she said that the formal inauguration was to be held tomorrow by Prime Minister Narendra Modi. Addressing the media, Defence Minister Nirmala Sitharaman said that all the three services will be displaying their might in this mega defence expo. However, the focal point of the defence expo will be to project India as the next hub of defence production and manufacturing.

“India has always been the largest importer of arms and weapons. The major aspect of this defence expo



is that it will mark the indigenous defence manufacturing capabilities of India. This year, we have a clear accent that India will be a major defence manufacturer and an exporter”, said Nirmala Sitharaman today.

The Defence Minister also lauded DRDO, HAL and BEL for their immense contribution to research and development of India’s defence sector. She also said that DRDO which also has over 50 institutions under it, will also showcase their product in the expo and will actively compete with the private sector. “India will not just manufacture for purposes of import substitution, but

will also boost defence production to export Indian made defence products to countries around the world”, she added.

The mega exhibition began today with the participation of major international and domestic defence firms displaying their cutting-edge products. The Defence Minister said that the agenda of this defence

exposition was to change India's image as an importer to India as an exporter of defence products. The tagline of the expo, "India: The Emerging Defence Manufacturing Hub", also suggests India's ambitious attempt to project itself as a manufacturer of defence products. This year's defence expo is the 10th edition of the event.

According to a press release by the Defence Ministry, a total of 670 defence firms, which includes 154 foreign manufacturers and over 500 domestic companies are participating in this defence exhibition. The DefExpo 2018 has attracted delegations from over 47 countries and is seeing participation from major companies such as Lockheed Martin, Saab, Dassault, Bae Systems, Boeing, Airbus and Rafale.

Mazagon Dock Ship Builders will exhibit their P-75 Scorpene Class Stealth Submarine, multi-purpose support vessel and INS Kolkata-Guided Missile Stealth Destroyer. DRDO's exhibit will include MBT Arjun MK-1 Tank, Astra Missiles, Varunastra. Other exhibits will include Tejas fighter jets, Dhanush artillery tank, Advanced towed artillery gun systems etc.

The four-day exhibition which is spread over an area of 2.90 lakh square feet, will showcase India's strength in defence manufacturing sector. The DefExpo 2018 will be open for business visitors between 1:00 pm to 5:00 pm from tomorrow. The Ministry also said that general visitors will be given free entry on 14th April 2018. The Defence Minister also announced the eight winners of the national level open challenge competition: "Solution to Problem" today.

<http://www.financialexpress.com/defence/defexpo-2018-begins-in-chennai-big-boost-for-defence-production-under-make-in-india-initiative/1129195/>



Thu, 11 April, 2018

Two regiments of Indian army are equipped with Arjun Mark 1 main battle tanks

Two regiments of Indian army are now equipped with the Indian-made **Arjun Mark 1 main battle tank** (MBT), currently 124 Arjun Mark 1 have already been produced. Each tank regiment has 62 main battle tanks.

The Arjun Mark 1 is a main battle tank developed by India's Defense Research and Development Organization (DRDO), for the Indian Army. The Arjun Mark 1 is presented at DefExpo 2018, the Defense and Security Exhibition in Chennai (India) on the booth of DRDO.

The first 45 main battle tanks **Arjun Mark 1** were delivered to the Indian army between August 2004 and May 2009. More than 100 tanks have been delivered to the Indian Army by June 2011. After extensive field evaluations and tests, the tank entered service with the 75th Armoured Regiment on 12 May 2011.

The main armament of the Arjun Mark 1 consists of one 120 mm main rifled gun able to fire indigenously developed armour-

piercing fin-stabilized discarding-sabot ammunition. Second armament includes one PKT 7.62 mm coaxial



The Arjun Mark 1 MBT main battle tank of Indian army at DefExpo 2018, the Defense and Security Exhibition in Chennai, India, April 11, 2018. (Picture source Army Recognition)

machine gun, and one NSVT 12.7 mm machine gun mounted on the commander hatch. This machine gun can be used to protect the tank against aerial threats as helicopter and low flying aircraft.

The Arjun Mark 1 has a crew of four including driver seated at the right front of the hull. Commander, gunner and loader are located in the turret. The turret and glacis are protected with "Kanchan" ("gold") modular composite armour, which derived its name from Kanchan Bagh, Hyderabad, where the Defence Metallurgical Research Laboratory (DMRL) is located. Kanchan is made by sandwiching composite panels between Rolled Homogenous Armour (RHA). This helps in defeating APFDS and HEAT rounds.

The **Arjun Mark 1** is motorized with a German MTU engine coupled to a French Renk transmission. The water-cooled engine generates 1,400 hp. and is integrated with an Indian turbocharger and gearbox with four forward and 2 reverse gears. The Arjun Mark 1 can run at a maximum road speed of 67 km/h and 40 km/h in off-road conditions. It has a maximum road cruising range of 600 km.

The computerized fire control system aboard Arjun has been jointly developed by DRDO with Israeli company Elbit. The Fire Control System is stabilized on two axes, and with an extremely high hit probability (design criteria call for a greater than 0.9 Pk) replaces an earlier analogue one, which had problems due to its inability to function under the harsh desert conditions. The combined day sight from Bharat Electronics Ltd. and the thermal imager (formerly from Sagem, now reported to be from El-Op) constitute the gunner's primary sight.

http://www.armyrecognition.com/defexpo_2018_india_news_show_daily/two_regiments_of_indian_army_are_equipped_with_arjun_mark_1_main_battle_tanks.html



Thu, 11 April, 2018

Another setback for Indian missile programme, snag hits quick reaction missile test again

QRSAM tested at Balasore rolled uncontrollably fell into the Bay of Bengal Monday. This is at least the second failure for the missile in four tests.

New Delhi: India's missile development programme is going through a rough patch, with another snag

hitting the home-made quick reaction surface-to-air missile (QRSAM) during tests at the Balasore range in Odisha Monday.

The QRSAM system, being developed as an add-on to the Akash air defence missiles that are already in service with the Army and Air Force, has now undergone four tests, of which at least two have been unsuccessful.

Sources said during the latest test, the missile took off from its launcher successfully, but rolled uncontrollably during flight before ditching into the Bay of Bengal. The missile is being developed by DRDO's Hyderabad missile complex,



A file image of the Akash Missile | Commons

and top officials were present at the test site during the trial.

It is learnt that the DRDO leadership team on missile systems is studying the failure and is trying to find the root cause of the problem. Previous trials of the missile were conducted in June, July and December last year. As reported by ThePrint, during the 22 December test, the missile hit turbulence within 1.5 seconds of taking off, as an actuator did not respond to a software command. The QRSAM is supposed to take down fast moving incoming air targets like missiles and fighter jets at extremely short notice.

India has been planning to showcase the Akash as a Made in India missile that is available for exports. In fact, the missile is being showcased at the Defence Expo near Chennai this week to possible customers who will be visiting the show. In addition, the Indo-Russian Brahmos missile is also being displayed at the India pavilion during the event, as an export option to friendly foreign nations.

The QRSAM is a recent DRDO project that was undertaken to meet demands of both the Air Force and the Army. The services had requested for imports to meet urgent requirements for air defence missiles, which were turned down after DRDO assured that it could develop the system indigenously.

<https://theprint.in/security/a-setback-for-indian-missile-programme-snag-hits-quick-reaction-missile-test/48577/>



Thu, 11 April, 2018

DefExpo 2018: DRDO to showcase LCA Tejas, Main Battle Tank Arjun MK-II, Nirbhay missile

There will be live demo during the April 11–14, 2018 expo of LCA Tejas, MBT Arjun MK-II, ARRV, T-72 Trawl, T-72 Bridge Layer Tank, Wheeled Armoured Platform, Mobile Surveillance System and ATAGS.

India's indigenous Light Combat Aircraft (LCA) Tejas, Main Battle Tank (MBT) Arjun MK-II and Arjun MK-I, Nirbhay Missile System will be the star attractions at the Defence Research and Development Organisation's stall at the four-day DefExpo 2018 at Kancheepuram near Chennai, Tamil Nadu. The other star attractions at the DRDO stall are Arjun Armoured Recovery and Repair Vehicle (ARRV), T-72 Trawl, T-72 Bridge Layer Tank, Wheeled Armoured Platform (WhaP), Mobile Surveillance System and Advanced Towed Artillery Gun System (ATAGS).



There will be live demo during the April 11–14, 2018 expo of LCA Tejas, MBT Arjun MK-II, ARRV, T-72 Trawl, T-72 Bridge Layer Tank, Wheeled Armoured Platform, Mobile Surveillance System and ATAGS. The outdoor exhibits include Nirbhay Missile System with Launcher, Autonomous Unmanned Ground Vehicle (AUGV), MBT Arjun Mk-I, Astra Missile, Low Level Transportable Radar (LLTR) System, Medium Power Radar (MPR) System, Convoy Jammer, Multipurpose Decontamination System (MPDS), Varunastra - Heavy Weight Anti Submarine Electric Torpedo and Bio-Toilet.

There is an exclusive India Pavilion for the first time in DefExpo, which will showcase the combined strength of DRDO, public and private sector in defence manufacturing.

DRDO is the largest exhibitor at DefExpo 2018 and its exhibits are in two broad categories, one pertaining to technologies ready for transfer to industries for productionisation and the other pertaining to technologies ready for exports.

The exhibits include technologies pertaining to aeronautics, missiles, armaments, combat vehicles, naval systems, electronics, information warfare and life sciences. The pavilion also presents an array of digital experiences including war game simulation zone, augmented reality, virtual reality, physical simulators, etc.

During the event, Transfer of Technology (ToT) of DRDO developed products to private industry and Defence PSU partners will be done in the presence of Defence Minister Nirmala Sitharaman on April 11, 2018. Some of these include: ASTRA Missile, Varunastra - Heavy weight torpedo, Anti Thermal Anti Laser Grenade, Identification of Friend & Foe (IFF), HUMSA – UG, ABHAY Sonar, etc. A record number of 200 ToTs in the last three years with revenue generation to the tune of Rs 190 crore by DRDO has spurred the growth of defence manufacturing sector, echoing the theme of DefExpo - 2018, 'India : The Emerging Defence Manufacturing Hub'.

<http://zeenews.india.com/india/defexpo-2018-drdo-to-showcase-lca-tejas-main-battle-tank-arjun-mk-ii-nirbhay-missile-2098801.html>



Thu, 11 April, 2018

Defexpo 2018: DRDO showcases guided variant of Pinaka Mk II rocket

By Jayesh Dhingra

India's state-owned Defence Research and Development Organisation (DRDO) showcased a guided version of the locally developed 214 mm Pinaka Mk II rocket at the 11-14 April Defexpo 2018 exhibition in Chennai. The weapon, which is being developed by the DRDO's Armament Research and Development Establishment (ARDE), is essentially a Pinaka Mk II rocket configured with a guidance module in the previously, nominally empty, nose section.

The guided rocket is powered by the same composite solid-propellant motor as the Mk II and can be fitted with same choice of three warheads: a pre-fragmented high-explosive (PFHE), an incendiary, or a reduced HE (RHE) practice warhead.

<http://www.janes.com/article/79207/defexpo-2018-drdo-showcases-guided-variant-of-pinaka-mk-ii-rocket>