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### **1. DRDO And Indian Navy Test-Fire New NASM-SR Missile ( May 18, 2022 )**

Defence Research and Development Organisation (DRDO) successfully conducted the maiden flight test of the indigenously developed "Naval Anti-Ship Missile-Short Range" or NASM-SR.

- It was launched from Indian Navy helicopter Seaking 42B from DRDO's Interim Testing Range, Balasore in Odisha on 18 May 2022.
- According to DRDO, the NASM-SR would be a 380 kilogram projectile with a maximum range of 55 kilometres that will be deployed to replace the previous Sea Eagle missiles on Indian Navy Sea King helicopters.
- In a tweet, Indian Navy said, this firing is a significant step towards achieving self-reliance in niche missile technology and reaffirms the Indian Navy's commitment to indigenization.
- The Naval Anti-Ship Missile-Short Range has been developed in association with Defence Research and Development Organisation,
- It is the first indigenous air-launched Anti-ship missile system for the Indian Navy.
- The missile employed many new technologies, including an indigenously developed launcher for the helicopter, state-of-the-art navigation system and integrated avionics.
- **Defence Research and Development Organisation (DRDO):**
  - It is a premier defence research and development agency under the Ministry of Defence, Government of India.
  - It aims to make India self-reliant in critical defence technology and systems.
  - It was set up in 1958.
  - Headquarters: New Delhi
  - Chairman: G. Satheesh Reddy

### **2. The extended range version of the air-to-air BrahMos missile was successfully launched ( May 13, 2022 )**

The extended range version of the air-to-air BrahMos missile was successfully launched from a Sukhoi-30 Mark-I fighter aircraft.

- During the test, the missile hit the target accurately in the Bay of Bengal.
- This was the first launch of the extended-range version of the BrahMos missile from a Sukhoi-30 Mark-I fighter aircraft.
- The advanced version of this missile has a range of around 350 kms while the original missile had a range of around 290 kms.

- Indian Defence Research Organisation (DRDO), Indian Navy, BAPL and HAL were involved in this test along with the Indian Air Force.

- **Sukhoi 30 MKI fighter aircraft**

- The Sukhoi 30 MKI is the flagship fighter aircraft of the Indian Air Force.
- This fighter aircraft is made in collaboration with Russia's military aircraft manufacturer Sukhoi and India's Hindustan Aeronautics Limited.
- It was inducted into the Indian Air Force in the year 2002 and since 2004, they have been manufactured in India by Hindustan Aeronautics Limited.
- This aircraft can attack at a distance of 3000 km.

- **About BrahMos missile**

- BrahMos is a short-range ramjet, supersonic cruise missile.
- It can be launched from submarines, ships, aircraft or even from land.
- It has been jointly developed by Russia's NPO Mashinostroyeniya and India's Defence Research and Development Organisation.
- Brahmos is named after the Brahmaputra of India and the Moskva river of Russia.

- **Features of BrahMos**

- It can change course in the air and can also hit the moving target.
- It can fly at a height of 10 metres and is not caught by radar.

### **3. DRDO successfully test-fired Advanced Towed Artillery Gun System ( May 3, 2022 )**

The longest range indigenous artillery gun i.e. 155mm/52 Advanced Towed Artillery Gun System (ATAGS) was successfully test fired at Jaisalmer's Pokhran Firing Range (PFFR) from 26 April to 2 May 2022.

- **What is ATAGS ?**

- The Advanced Artillery Gun System Project is a modern 155 mm artillery gun developed by DRDO.
- This gun is manufactured by Bharat Forge and Tata Advanced Systems Limited.
- It weighs 18 tonnes and has a firing range of 48 km.
- The 155mm ATAGS developed by DRDO was first fired in 2016.
- It took almost four years to develop the Advanced Towed Artillery Gun System, the Indian Army currently has seven Advanced Towed Artillery Guns available.

### **4. Anti-ship version of BrahMos missile successfully test-fired ( April 29, 2022 )**

An anti-ship version of the BrahMos supersonic cruise missile was successfully test-fired jointly by the Andaman and Nicobar Command and Indian Navy.

- The Andaman and Nicobar Command is the only tri-services command of the Indian armed forces.
- On 19 April, the Indian Air Force (IAF) successfully test-fired a BrahMos missile from a Sukhoi fighter jet on the eastern seaboard.
- In march 2022, the Indian Navy successfully test-fired an improved version of the BrahMos missile from a stealth destroyer in the Indian Ocean.

- **About BrahMos-**

- It is a joint venture between the Defence Research and Development Organisation (DRDO) of India and Russia's NPOM.
- Brahmos is named after the Brahmaputra and Moskva rivers.
- Brahmos produces supersonic cruise missiles that can be launched from submarines, ships, aircraft, or land platforms.
- BrahMos missile flies at a speed of almost three times the speed of sound or 2.8 Mach.
- The range of the advanced version of the missile is learnt to have been extended to around 350 km from the original 290 km.

## **5. National Cyber Security Incident Response Exercise (NCX India) ( April 19, 2022 )**

Recently, the National Security Council Secretariat organised the National Cyber Security Incident Response Exercise (NCX India).

- It will be conducted as a hybrid exercise over a period of ten days from 18 to 29 April 2022.
- The aim is to train senior management and technical personnel of Government/Critical Sector organisations and agencies on contemporary cyber threats and handling cyber incidents and responses.
- The program is being conducted by the National Security Council Secretariat (NSCS), Govt of India in association with the Data Security Council of India (DSCI).
- It is supported by the Defence Research and Development Organisation (DRDO).
- The platform for training is being provided by CyberExer Technologies, an Estonian cybersecurity company.
- More than 140 officials will be trained through training sessions, Live Fire and Strategic exercises.
- The participants will be trained on various key cyber security areas such as Intrusion Detection Techniques, Malware Information Sharing Platform (MISP), Vulnerability Handling & Penetration Testing, Network Protocols & Data Flows, Digital Forensics, etc.

## **6. Helina Missile's Testing Successful! Now It can hit the enemy tank accurately even in the dark ( April 12, 2022 )**

India successfully test-fired the anti-tank guided missile HELINA on 11 April. This missile was tested by Advanced Light Helicopter in the high altitude area of Ladakh, which has been a complete success.

- This missile works on the principle of fire and forget. This means forget it after launch, as they are able to reach their target.
- This missile works on Infrared Imaging System.
- During the test, this missile accurately hit a simulated tank. The missile was launched from an Advanced Light Helicopter.
- Its testing has been done in Pokhran.
- Earlier, this missile was also successfully tested at Pokhran firing range in Rajasthan. India has another anti-tank missile named Nag. Both the missiles can be fired from helicopters and both have a range of 7 km.
- According to the Ministry of Defence, DRDO, Indian Air Force and Army have jointly carried out this test.

### **Features of the missile:**

- It can be fired in any season.
- This missile is capable of hitting the target accurately even in the dark night and can destroy enemy tanks.
- They are capable of targeting enemy tanks in two ways. One it can hit the target straight and the other can target the tank in top attack mode.

India has recently released a list of 101 such weapons and systems which have been banned from importing from other countries. This ban is for the next five years. India's objective behind doing this is to make itself self-reliant in the field of defence.

## **7. Successfully test-fired anti-tank guided missile 'Helina' ( April 11, 2022 )**

Indigenously developed helicopter launched Anti-Tank Guided Missile 'HELINA' was successfully flight tested on April 11, 2022 at high-altitude ranges as part of user validation trials.

- The flight-test was jointly conducted by the teams of scientists from Defence Research and Development Organisation (DRDO), Indian Army and Indian Air Force (IAF).
- The flight trials were conducted from an Advanced Light Helicopter (ALH) and the missile was fired successfully engaging a simulated tank target.
- The missile is guided by an Imaging Infra-Red (IIR) Seeker operating in the Lock on Before Launch mode.
- It is one of the most advanced anti-tank weapons in the world.

- In continuation to validation trials conducted at Pokhran in Rajasthan, proof of efficacy at high altitudes paves the way for its integration on the ALH.

## **8. India successfully test-fires upgraded version of Pinaka Mk-I Rocket ( April 11, 2022 )**

Pinaka Mk-I Rocket System (EPRS) and Pinaka Area Denial Munition (ADM) Rocket System have been successfully test fired by Defence Research and Development Organisation (DRDO) and Indian Army at Pokhran firing range.

- The required accuracy and stability were achieved by these rockets during the trials, meeting all the test objectives satisfactorily.

### **Pinaka Mk-I :**

- Pinaka Mk-I is an upgraded rocket system with a range of about 45 km. The Pinaka-II rocket system has a range of 60 km. The rocket system has been jointly designed by two laboratories of DRDO, Ordnance High Energy Materials Research Laboratory (HEMRL) and Research and Development Establishment (ARDE).

### **Strategic Capabilities of Pinaka Mk-I:**

- During the escalation of tension with China, India had deployed this completely indigenous system on Eastern Ladakh and LAC.
- It is named after 'Pinaka', the bow of Lord Shiva. It is a multi barrel rocket launcher system.
- The Pinaka Mk-I Enhanced Rocket System is an upgraded version of the early Pinaka.
- This rocket system has given the army a lethal alternative to ground attack.
- The multi-barrel launcher is capable of firing 72 rockets in just 44 seconds.

## **9. DRDO test-fires two surface-to-air missiles ( March 28, 2022 )**

Defence Research and Development Organisation (DRDO) conducted two successful flight tests of the Indian Army version of Medium Range Surface to Air Missile (MRSAM) at Integrated Test Range, Chandipur off the coast of Odisha on March 27, 2022.

- This MRSAM version is a Surface-to-Air Missile developed jointly by DRDO and Israel Aerospace Industries (IAI), Israel for use by the Indian Army.
- **It is capable of engaging multiple targets at ranges up to 70 kms.**
- **The MRSAM Army weapon system comprises multi-function radar, mobile launcher system and other vehicles.**

### **Important for Exam**

**DRDO chairman :** Dr G Satheesh Reddy

The chairman of DRDO is also the Scientific Advisor to the Defence Minister.

### **10. Russia uses Hypersonic Missile In Ukraine ( March 21, 2022 )**

Russia said on 19 March 2022 that it had used hypersonic Kinzhal (Kh-47M2) missiles to destroy a large weapons depot in Ukraine's western Ivano-Frankivsk region.

It was the first time Russia had deployed the hypersonic Kinzhal system since it sent its troops into Ukraine on February 24, 2022.

The Kinzhal missile can be fired from Mig-31 fighter aircraft. The missile can carry both conventional warheads or nuclear weapons.

#### **Hypersonic Missile**

- Hypersonic missiles are those missiles which can fly five times the speed of sound in the upper atmosphere or about 6,200 km per hour.
- The main feature of the missile is its manoeuvrability which makes its detection by radar very difficult.
- At present China has tested the missile and North Korea has also claimed to have tested it. The United States of America do not have these types of missiles.

Defence and Research and Development Organisation (DRDO) is also working on developing this technology in India. In 2020 it successfully conducted the maiden test of the High-Speed Technology Demonstrator Vehicle (HSTDV) using an indigenously developed propulsion system.