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1. IITK and DRDO have collaboratively launched a Center of Excellence in Defense Technologies (May 31, 2024)

IIT Kanpur and DRDO have jointly launched the DRDO-Industry-Academia Centre of Excellence (DIA COE) at the IIT Kanpur campus, focusing on interdisciplinary research in advanced defense technologies.

An Overview of the News

- Sanjay Tandon, previously serving as the director of the Institute of Technology Management (ITM) in Mussoorie, Uttarakhand, has assumed the role of director at the center of excellence located at IIT Kanpur.

Research Focus:

- The center aims **to lead focused research in various defense verticals.**
- These include **advanced nanomaterials, accelerated material design, high-energy materials, and bioengineering.**

Funding and Infrastructure:

- Defence Research and Development Organisation (DRDO) will fund the projects and establish key technical facilities.
- Modern infrastructure will be set up to enable and boost Research and Development (R&D) programs.

Establishment Timeline:

- The establishment of DIA COE at IIT Kanpur commenced in 2022.
- It was initiated through a Memorandum of Understanding (MoU) signed during Def-Expo-2022 at Gandhinagar, Gujarat.

Background:

- DefExpo 2022 was a flagship event of the Ministry of Defence.
- It aimed to achieve Atma Nirbharta in defense and reach the USD 5 billion defense exports target by 2024.

About DRDO

- It serves as the Research and Development (R&D) arm of the Ministry of Defence (MoD).
 - Founded:- **1958**
 - Chairman:- **Dr. Samir Venkatpati Kamat**

HQ:- **New Delhi, Delhi**

2. DRDO Successfully Flight-Tests RudraM-II Missile from Su-30 MK-I Platform (May 30, 2024)

The Defence Research and Development Organisation (DRDO) successfully flight-tested the RudraM-II air-to-surface missile.

An Overview of the News

- The test was conducted from the Su-30 MK-I platform of the Indian Air Force in Odisha.
- The Defence Ministry announced that the flight test met all the trial objectives.

RudraM-II Missile System

- RudraM-II is an indigenously developed, solid-propelled, air-launched missile system.
- The missile system incorporates a number of state-of-the-art indigenous technologies developed by various DRDO laboratories.

About DRDO

- It is an agency under the Department of Defense Research and Development.
- It works under the Ministry of Defense of the Government of India.
- DRDO is responsible for military research and development.
 - Established:- 1958
 - Chairman:- Sameer V. Kamat
 - Headquarters:- DRDO Bhawan, New Delhi
 - Aircraft Design:- DRDO Nishant, DRDO Lakshya, Avatar

3. Kadet Defence Systems Introduces India's First Indigenous Loitering Aerial Munitions (LAM) (May 14, 2024)

Kadet Defence Systems (P) Limited (KDS) introduces India's first Loitering Aerial Munitions (LAM) for the Indian Armed Forces.

An Overview of the News

- Developed under a unique Development cum Production Partner (DCPP) model with the Defence Research and Development Organisation (DRDO).
- Reflects KDS commitment to fostering indigenous innovation and self-reliance in defence production.

Features of India's 1st LAM:

- The indigenous LAMs are entirely designed and manufactured in India.
- Over 90% of components domestically sourced.
- Incorporates cutting-edge technologies, including Canister Aerial Loitering Munition (CALM), Combat Unmanned Aerial Vehicles (UAVs) with stand-off capabilities, and Tactical Vertical Takeoff & Landing (VTOL) UAVs.
- Adaptability to various terrains and altitudes, from deserts to plains, and even high-altitude regions surpassing 5000 meters.
- Capabilities include serving as combat UAVs capable of precision strikes and Kamikaze drones for targeted engagements, reminiscent of cruise missiles.

Additional Information:

- Secured a contract to deliver 50 LAM systems by the end of 2024, meeting the operational requirements of the Indian armed forces.
- Aims to increase LAMs production and deliver an estimated 5000 systems in the next 2 to 3 years.

About KDS:

- It is a privately owned company specializing in the production of aerospace products, with a primary focus on Unmanned Systems.
- Avdesh Khaitan serves as the co-founder and Chief Executive Officer (CEO) of the company.
- The headquarters of KDS is located in Bengaluru, Karnataka.
- The company was established in the year 2011.

4. DRDO Successfully Tests Indigenous Cruise Missile at Odisha (April 22, 2024)

On April 18, 2024, the Defence Research and Development Organisation (DRDO) conducted a successful flight-test of the Indigenous Technology Cruise Missile (ITCM) from the Integrated Test Range (ITR) in Chandipur, Odisha.

An Overview of the News**Features of Indigenous Technology Cruise Missile (ITCM):**

- Advanced Avionics: Equipped with advanced avionics and software to ensure enhanced and reliable performance.
- Development: Developed by DRDO's Aeronautical Development Establishment (ADE) in Bengaluru, Karnataka, with contributions from other Indian laboratories and industries.

- Propulsion System: The missile features an indigenous propulsion system developed by the Gas Turbine Research Establishment (GTRE) in Bengaluru, Karnataka.

Key Observations during the Test:

- Range Sensors: Various Range Sensors including Radar, Electro Optical Tracking System (ETOS), and Telemetry deployed by ITR at different locations to ensure comprehensive coverage of the flight path.
- Monitoring from Aircraft: The flight of the missile was monitored from the Su-30-Mk-I aircraft of the Indian Air Force (IAF).

About ADE:

- Responsibility: A laboratory of DRDO entrusted with conducting research and development in military aviation.
- Director: Y Dilip
- Headquarters: Located in Bengaluru, Karnataka.

5. Successful MPATGM Warhead Flight Trials Conducted by Indian Army and DRDO (April 16, 2024)

The Indian Army and DRDO recently conducted successful warhead flight trials of the Man Portable Anti-tank Guided Missile (MPATGM) Weapon System on April 13, 2024, at the Pokhran Field Firing Range in Rajasthan.

An Overview of the News

- Components of the MPATGM Weapon system include the MPATGM itself, Launcher, Target Acquisition System (TAS), and Fire Control Unit (FCU).
- MPATGM was developed domestically by DRDO in collaboration with VEM Technologies Private Limited, based in Hyderabad, Telangana.
- The trials aimed at meeting the operational requirements specified in the General Staff Qualitative Requirements (Infantry, Indian Army), covering the complete operational envelope.
- Successful penetration trials of the Tandem Warhead System of MPATGM were also conducted during these trials.

Key Features of MPATGM:

- The missile is approximately 1.3 meters long with a diameter of around 0.12 meters.
- It has a strike range of 2.5 kilometers and weighs about 14.5 kilograms.
- Equipped with a modern Infrared Imaging Seeker and advanced avionics.

Manufacturing Location:

- Bharat Dynamics Limited (BDL) in Bhanoor, Telangana, is designated for its manufacturing.

About DRDO

- It serves as the Research and Development (R&D) arm of the Ministry of Defence (MoD).
- Chairman - Dr. Samir Venkatpati Kamat
- HQ - New Delhi, Delhi
- Founded - 1958

6. Successful flight test of Agni-Prime missile (April 4, 2024)

Agni-Prime missile successfully flight tested in Odisha.

An Overview of the News

- The test was conducted jointly by the Strategic Force Command (SFC) and Defense Research and Development Organization (DRDO) from Dr APJ Abdul Kalam Island.
- The Defense Ministry said that the Agni-Prime missile met all the test objectives, demonstrating its reliable performance.

Introduction of Agni-P (Agni-Prime):

- Agni-P, also known as Agni-Prime, is a medium-range ballistic missile under development by India's Defence Research and Development Organisation (DRDO).
- It is the sixth missile in the Agni series and is designed to be a two-stage, surface-to-surface, canister-launched, and road-mobile system.

Purpose and Deployment:

- Agni-P is intended to be deployed within the Strategic Forces Command for operational use.
- Its development aims to enhance India's ballistic missile capabilities, particularly in the medium-range segment.

Key Features and Upgrades:

- The missile incorporates significant upgrades compared to its predecessors.
- These upgrades include advancements in the composite motor casing, navigation systems, and guidance systems.

Maneuverable Reentry Vehicle (MaRV):

- Agni-P is equipped with a maneuverable reentry vehicle (MaRV), enhancing its effectiveness in penetrating enemy defenses and accurately hitting targets.

Solid-Fueled Design:

- Agni-P utilizes solid fuel propulsion, ensuring reliability, mobility, and ease of deployment.

Canister Launch Capability:

- Its canister-launch system adds to its mobility and readiness, allowing for rapid deployment and launch from various platforms.

Strategic Significance:

- The development and deployment of Agni-P mark a significant advancement in India's strategic missile program.
- It strengthens India's deterrence capability and provides a credible response to evolving security challenges in the region.

7. DAC gave its approval to the indigenous missile Dhruvastra (Sept. 23, 2023)

The Indian Defense Acquisition Council (DAC) gave its approval to the indigenous short-range air-to-surface missile Dhruvastra.

An Overview of the News

- The Dhruvastra missile is designed **to enhance India's combat capabilities against enemy tanks and armored vehicles and will be deployed on DHRUV MK-IV helicopters.**
- DAC's approval of the Dhruvastra missile represents a significant enhancement to India's military capabilities.
- Developed by the Defense Research and Development Organization (DRDO) as part of the Integrated Guided Missile Development Program (IGMDP), it is a valuable addition to India's military assets.

Dhruvastra Missile:-

- It is a third-generation, fire-and-forget anti-tank guided missile (ATGM) system known for its versatility and advanced features.
- **Dual Engagement Mode:** Dhruvastra can operate in direct hit and top attack modes, increasing its adaptability to various combat scenarios.
- **Effective Range:** Its range ranges from 500 meters to an impressive 7 kilometers, allowing it to engage targets across a wide spectrum.

- **High altitude launch:** Dhruvastra can be launched from altitudes up to 4 kilometers, providing a strategic advantage in mountainous terrain.
- **Effective Target Tracking:** Equipped with an Imaging Infrared-Seeker (IIS), it can track and guide the missile to its target based on the heat signature of the target, ensuring accuracy even in challenging conditions.
- **Penetrating Warhead:** The Dhruvastra's specialized warhead is designed to penetrate various types of armor, including reactive armor found on modern tanks.

8. NITI Aayog released 'Export Preparedness Index (EPI) 2022' report (July 19, 2023)

The ITI Commission released the 3rd edition of 'Export Preparedness Index (EPI) 2022' for the States/UTs of India.

An Overview of the News

- The report was released by Vice President Suman Berry and other officials.
- It aims to promote India as a global export player by leveraging regional competitiveness and diversity.
- The focus is on export performance both at the state and district levels.

Objectives of EPI 2022

- Empowering state governments with sector-specific insights for decision making.
- Identify strengths and address weaknesses to promote comprehensive development.
- To promote competitive federalism among the States/UTs.

Four Pillars of EPI 2022

1. **Policy pillar:** Evaluates the adoption of the export-related policy ecosystem and institutional framework at the state and district levels.
2. **Business Ecosystem:** Assesses the business environment, supporting infrastructure and transport connectivity in the States/UTs.
3. **Export ecosystem:** Focuses on export-related infrastructure, business support and research and development (R&D) to foster innovation.
4. **Export Performance:** Measures the growth, concentration and global market footprint of a state's exports.

Ten sub-pillars - Export Promotion Policy, Institutional Framework, Business Environment, Infrastructure, Transport, Connectivity, Export Infrastructure, Trade Support, R&D Infrastructure, Export Diversification, and Growth Orientation

Top Performing States/UTs

Coastal states including Tamil Nadu, Maharashtra, Karnataka and Gujarat performed well in all categories.

EPI 2022 Rankings

Rank	State	Category	Score
1	Tamil Nadu	Coastal	80.89
2	Maharashtra	Coastal	78.20
3	Karnataka	Coastal	76.36
4	Gujarat	Coastal	73.22
5	Haryana	Landlocked	63.65
6	Telangana	Landlocked	61.36
7	Uttar Pradesh	Landlocked	61.23
8	Andhra Pradesh	Coastal	59.27
9	Uttarakhand	Himalayan	59.13
10	Punjab	Landlocked	58.95

9. India gifts missile corvette INS Kirpan to Vietnam (June 20, 2023)

India-gifts-missile-corvette-INS-Kirpan-to-Vietnam

Defense Minister **Rajnath Singh** on 19 June announced the gift of an indigenous in-service **missile corvette, INS Kirpan**, to the **Vietnam People's Navy**.

An overview of the news

- The announcement is expected to significantly enhance the capabilities of the **Vietnamese Navy**.
- The announcement was made during talks between Defense Minister Singh and Defense Minister of Vietnam General **Phan Van Gang in Delhi**.
- During the meeting, bilateral defense cooperation initiatives between India and Vietnam were reviewed and both sides expressed satisfaction at the progress of the ongoing engagements.
- The Ministers identified opportunities to further enhance cooperation, particularly in areas such as defense industry cooperation, maritime security and multinational cooperation.

- Apart from the talks, the Defense Minister of Vietnam also visited the **Defense Research and Development Organization (DRDO)** headquarters to explore ways to enhance defense industrial capabilities through research and joint production.
- The strengthening of defense ties between India and Vietnam underscores the strategic partnership between the two countries and their shared commitment to regional security and cooperation.

About INS Kirpan

- INS Kirpan is a missile corvette belonging to the **Khukri class** with a displacement of about **1,350 tonnes**.
- It was commissioned into the Indian Navy on **12 January 1991**.
- The length of the corvette is **91 meters** and the beam is **11 metres**.
- It is capable of attaining speeds of over **25 knots**.
- Equipped with a variety of weapons including medium-range cannon, **30 mm close-range gun**, chaff launcher and surface-to-surface missiles, INS Kirpan has the versatility to play multiple roles.
- The roles performed by INS Kirpan include coastal and offshore patrolling, coastal security, surface warfare, anti-piracy operations and Humanitarian Assistance and Disaster Relief (HADR) operations.

10. First Janjatiya Khel Mahotsav (June 16, 2023)

First-Janjatiya-Khel-Mahotsav

Recently, the **first Janjatiya Khel Mahotsav** was organized at the **Kalinga Institute of Social Sciences, Bhubaneswar**, in a collaborative effort between the **Ministry of Culture, the Odisha Government, and KIIT University**.

An overview of the news

- The event brought together **5,000 tribal athletes and 1,000 officials** from **26 states**, showcasing the diversity and richness of indigenous sports in India.
- By organizing such events and supporting the promotion of indigenous sports, the government aims to preserve and revive these traditional games, ensuring their continued relevance and encouraging the younger generation to participate and excel in them.

About Indigenous Sports

- The promotion and development of indigenous sports primarily lie with the respective **State/Union Territory Governments**, as **'Sports' is a state subject**.
- However, the Union Government supports their efforts through initiatives such as the **'Khelo India - National Programme for Development of Sports'** Scheme.

- This scheme includes a specific component dedicated to the development and promotion
- of rural and indigenous/tribal games across the country.
 - It provided an opportunity for athletes from different states to come together, compete, and exchange their experiences, thereby promoting cultural exchange and unity.
 - Under this scheme, certain indigenous games have been identified for promotion, such as **Mallakhamb, Kalaripayattu, Gatka, Thang-Ta, Yogasana, and Silambam.**