

Testwale Current Affairs PDF

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1. Hot test of the scramjet engine was conducted successfully (Dec. 12, 2022)

Hot test of the scramjet engine was conducted successfully

The **Indian Space Research Organisation (ISRO)** has successfully tested the **Hot Test of Scramjet Engine** at ISRO's Propulsion Research Complex at **Mahendragiri in Tirunelveli district of Tamil Nadu.**

Important facts

- The Hot Test System is a 100% production test used to check all operating parameters of the engine as they would function in real time.
- The test lasted for 11 seconds.
- With this test, the Indian space agency's effort to develop reliable next-generation airbreathing scramjet engines to launch satellites into predetermined orbit at low cost has crossed a significant milestone.

About Scramjet Engine

- The scramjet is a more advanced version of the **ramjet engine** and can operate efficiently at **hypersonic speeds.**
- India is the **fourth country** to demonstrate the flight testing of a Scramjet Engine.
- This allows for supersonic combustion by taking oxygen from the atmosphere during flight.
- It is then allowed to mix with the hydrogen already stored in the vehicle to trigger the oxygen combustion and propel the satellite to its designated orbit.

2. DCGI allows the export of SII made Ebola vaccine for export to Uganda (Dec. 8, 2022)

DCGI allows the export of SII made Ebola vaccine for export to Uganda

The [Drugs Controller General of India \(DCGI\)](#) on 8 December 2022 approved the export of India's first Ebola vaccine manufactured by **Serum Institute of India (SII)** to **Uganda.**

The vaccine has been developed by SII in collaboration with **Oxford University**, United Kingdom. This vaccine will be used for solidarity clinical trials in Uganda.

The [World Health Organisation \(WHO\)](#) has sought collaboration with manufacturers of Ebola vaccines for the prevention of the disease and has selected ChAdOx1 biEBOV as a potential vaccine for participation in a solidarity clinical trial in Uganda.

Oxford University signed an agreement with Serum Institute of India to manufacture ChAdOx1 biEBOV.

Serum Institute of India situated in Pune is the largest vaccine manufacturer in the world. SII makes vaccines for Covid-19, diphtheria, BCG, measles, rubella and others.

CEO of SII: **Adar Poonawala**

Ebola Virus

It was first reported in 1972 in South Sudan and in a village near **Ebola River in Democratic Republic of Congo**. Hence it is called the Ebola virus.

The virus can spread through direct contact with an infected animal (bat or nonhuman primate) or a sick or dead person infected with Ebola virus.

3. ISRO and Social Alpha sign MoU to establish SpaceTech Innovation Platform (Dec. 8, 2022)

ISRO and Social Alpha sign MoU to establish SpaceTech Innovation Platform

Indian Space Research Organisation (**ISRO**) and **Social Alpha** on 7 December signed an **MoU** to launch **SpaceTech Innovation Network (SpIN)**.

Important facts

- It is a one-of-its-kind public-private collaboration for start-ups and SMEs in the **space industry**.
- This is an important step towards providing further impetus to India's recent space reform policies.
- It will work towards identifying and unleashing the market potential of promising space technology innovators.
- SpIN has launched its **first innovation challenge** for developing solutions in areas of maritime and land transportation, urbanisation, mapping, and surveying.

About SpaceTech Innovation Network (SpIN)

- It will be **India's first dedicated platform** for innovation and venture development for the burgeoning space entrepreneurial ecosystem.
- It will primarily focus on facilitating space tech entrepreneurs in **three distinct innovation categories** -

1. Geospatial Technologies and Downstream Applications
2. Enabling Technologies for Space & Mobility
3. Aerospace Materials, Sensors, and Avionics

4. ISRO will develop “Spatial Data Infrastructure geoportal ‘Geo-Ladakh’ for Ladakh (Dec. 8, 2022)

ISRO will develop “Spatial Data Infrastructure geoportal ‘Geo-Ladakh’

The government of the Union Territory of Ladakh has approached the **Indian Institute of Remote Sensing (IIRS)**, a unit of the **Indian Space Research Organisation (ISRO)** for developing “Spatial Data Infrastructure geoportal ‘**Geo-Ladakh**’ for UT-Ladakh.

Important facts

- The project encompasses spatial database generation (water resources, vegetation and energy potential) using remote sensing, geospatial techniques and the development of a **Geo-portal** for hosting this database.
- The project also aims towards training of UT-Ladakh officials on **Geospatial techniques and applications**.
- Portal provides geospatial data visualization and analytics for UT-Ladakh, consisting of Spatial viewer, **Carbon Neutrality, Geospatial utility mapping and Geo-Tourism**.
- A Memorandum of Understanding was also signed between IIRS (ISRO) and UT-Ladakh Administration on January 1, 2022, towards carrying out the above work.
- Currently, ISRO is setting up an **optical tele-scope** at **Hanle** for tracking spacecraft and space objects.

5. Meghalaya Government launches ‘Asia's first Drone delivery hub for easy access to healthcare’ (Dec. 7, 2022)

Meghalaya Government launches ‘Asia's first Drone delivery hub

The **Meghalaya government** in partnership with Startup **TechEagle** has unveiled Asia's first drone delivery hub and network Meghalaya **Drone Delivery Network (MDDN)**, which is aimed at providing universal access to healthcare for the people in the state.

The **Meghalaya Drone Delivery Network (MDDN)** project is aimed at delivering vital supplies like drugs, diagnostic samples, vaccines, blood and blood components quickly and safely to different regions of the state using a dedicated drone delivery network.

The first official drone flight took off from Jengjal Sub Divisional Hospital on 5 December 2022, which acts as the hub, and delivered medicines to Padeldoba primary health centre in less than 30 minutes, which would otherwise have taken 2.5 hours by road.

It expected that the Meghalaya Drone Delivery Network (MDDN) would bring universal access to healthcare for 2.7 million people of Meghalaya.

Now with the help of drones, it will be possible to overcome the problem of lack of visibility, high delivery costs, outdated technology and inaccessibility through roads and railway networks and deliver better healthcare facilities to people of Meghalaya.

State of Meghalaya

It is also known as the **abode of clouds**. It is one of the 8 North Eastern states of India.

It became a state on 21 January 1972.

Governor: B.D.Mishra

Chief Minister: **Conrad Sangma**

Capital: Shillong

6. Delhi Police to design high-frequency radio system (Dec. 7, 2022)

Delhi Police to design high-frequency radio system

Delhi Police is set to design, install and supply the '**Open Standard Digital Trunking Radio System**' (**OS-DTRS**) and will phase out the current tetranet wireless network services.

About **Rs 100 crore** will be spent on this project, for which tenders were issued on 2 December.

About OS-DTRS System

- It will be a more efficient internal communication system, aimed at a **faster exchange of information and bigger networks**.
- This system provides multiple channels and common groups for policemen.
- It will also have a voice logger system, which can be used to describe a crime scene, interrogation details and evidence.
- The **project's master site** will be at the Delhi Police Head Quarters.
- Police are looking for private companies to run the system on **800 MHz frequency band** and microwave links.
- The master site will have OS-DTRS control and switching equipment, a network management system, 90 IP-based logger systems and a large LED display.
- Around **15,000 concurrent radio sets** will be made first and later expanded to 30,000 over time.
- This system will run for **at least 10 years** and will fix network problems faced by police personnel.

7. IIT Madras researchers develop technology to generate electricity from Sea Waves (Dec. 7, 2022)

IIT Madras researchers develop technology to generate electricity from Sea Waves

Indian Institute of Technology (IIT) Madras Researchers have developed an '**Ocean Wave Energy Converter**' that can generate electricity from sea waves.

Important facts

- The trials of this device were successfully completed during the second week of November 2022.
- The system, named '**Sindhuja-I**', was deployed by the researchers about six kilometres off the coast of **Tuticorin in Tamil Nadu**, where the sea depth is about 20 metres.
- Sindhuja-I can currently produce **100 watts of power**. It will generate **one megawatt** of power in the next three years.
- The research team plans to deploy a remote water desalination system and a surveillance camera at the location by December 2023.

What is Sindhuja-I system?

- The system has been named '**Sindhuja-1**', which means '**originating from the ocean**'.
- The system consists of a floating buoy, a spar and an electrical module.
- As the wave moves up and down, the buoy moves up and down. In the current design, a balloon-like system called a '**buoy**' has a central hole that allows a long rod called a spar to pass through.
- The spar can be attached to the seabed, and passing waves will not affect it, while the buoy will move up and down and generate relative motion between them.
- Relative motion drives an electric generator to generate electricity. In the current design the spar floats and a mooring chain keeps the system in place.

8. Anurag Thakur inaugurates Virtual Drone E-learning platform at Agni College of Technology (Dec. 6, 2022)

Anurag Thakur inaugurates Virtual Drone E-learning platform at Agni College of Technology

Information and Broadcasting minister **Anurag Thakur** on 6 December inaugurated the **Virtual Drone E learning platform** at **Agni College of Technology at Chengalpet near Chennai**.

Important facts

- He also flagged off the first-of-its-kind **drone yatra**.
- Drone technology is essential for defence, agriculture, horticulture, cinema and could substitute for many areas.

- At least one lakh drone pilots will be made under the make in India scheme in two years time by the Garuda Aerospace Technology in Chengalpet District.
- India is making significant progress in developing cutting edge in **drone technology**.
- Drone technology can be used to stop illegal mining and can create a massive impact on agriculture.

About Drone Yatra

- **Garuda Aerospace's** drone yatra, '**Operation 777**', inaugurated for agricultural uses is set to cover 777 districts to ease agricultural work across the country.
- The Drone Yatra will help farmers understand more about the technology and give them a better perspective on how to grow crops.
- Drones are truly revolutionary for the agriculture ecosystem and **Garuda Aerospace** is continuously moving forward to help farmers with effective agriculture techniques with the help of drones.
- Garuda Aerospace will be manufacturing more than **1 lakh drones** in the next 2 years.
- **Kisan Drones** currently being developed by Garuda are fitted with sensors, cameras, and sprayers that help in increasing food crop productivity, reduce crop loss, reduce farmer exposure to harmful chemicals.

9. Scientists urge Andhra Pradesh govt to protect glacial-period coastal red sand dunes of Vizag (Dec. 3, 2022)

protect glacial-period coastal red sand dunes of Vizag

Geologists have said recently that the **coastal red sand dunes of Vizag**, have much significance **geologically, archaeologically, and anthropologically** and it needs to be protected.

About Coastal red sand dunes

- The **Coastal Red Sand Dunes** also known as '**Era Matty Dibbalu**' is one of the many important sites in **Visakhapatnam** which have geological significance.
- The site is situated along the coast and is about 20 km north-east of Visakhapatnam city and about 4 km south-west of **Bheemunipatnam**.
- The site was declared as a **Geo-Heritage Site** by the **Geological Survey of India (GSI) in 2014**.
- The Government of Andhra Pradesh listed it under the category of '**protected sites**' in **2016**.

Significance of Coastal red sand dunes

- Such sand deposits are rare and are found only in three places in tropical areas in South Asia – **Terry Sands in Tamil Nadu, Era Matti Dibbalu in Visakhapatnam and one place in Sri Lanka.**
- Preserving this site is important, as its study can help understand the impact of **climate change**, as **Era Matti Dibbalu** has witnessed glacial and warm climate periods.
- The site is about **18,500 to 20,000 years old** and it can be related to the **last glacial period.**
- They are anthropologically and archaeologically important as they possibly contain **Mesolithic and neolithic cultural materials** as well.

10. Scientists revive nearly 48,500-year-old 'Zombie Virus' from bottom of frozen lake in Russia (Dec. 3, 2022)

Scientists revive nearly 48,500-year-old 'Zombie Virus'

French scientists have warned of the onset of another outbreak after they **revived a 48,500-year-old zombie virus** buried under a **frozen lake in Russia.**

Important facts

- It has broken the previous record of a **30,000-year-old virus** discovered by the same team in Siberia in 2013.
- This report is published in the **New York Post.**
- The new research was prepared by **Jean-Marie Alempic**, a microbiologist at the **French National Center for Scientific Research.**
- It has been said in the report that due to the survival of this zombie virus, a more devastating situation can arise in plants, animals and humans.
- Scientists have expressed the possibility of another epidemic like corona due to the survival of this virus.

Threat of melting glacier

- According to the report, due to **global warming**, permanently frozen ice is melting, which covers a quarter of the **northern hemisphere.**
- This has a destabilising effect on organic matter that has been frozen for millions of years, including **deadly microbes.**
- Research has shown that part of this organic matter includes revived cellular microbes (prokaryotes, unicellular eukaryotes) as well as viruses that have been dormant since prehistoric times.

What is a Zombie Virus?

- **Zombie virus** is the term given to a virus that is frozen in ice and therefore dormant.
- Research mentions **13 viruses**, each of which has its own genome.
- It is called **Pandoravirus Yedoma** which is 48,500 years old and has the ability to infect other organisms.
- It was discovered at the bottom of a lake in **Yukechi Alas in Yakutia, Russia**.
- All of the zombie viruses have the potential to be infectious and hence pose a health danger.
- Scientists believe that epidemics like **Covid 19** will become more common in the future.