

Factly Weekly

Compilation

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Space Docking

News: Recently, the Indian Space Research Organisation (ISRO) successfully showcased space docking.

About Space Docking

- Space docking is the **process of joining two spacecraft in orbit**.
- It involves **bringing fast-moving spacecraft to the same orbital trajectory**, moving them closer to one another either manually or autonomously, and finally locking them together mechanically.
- This ability is **crucial for complex space missions**, including assembling space stations, conducting crew exchanges, and delivering supplies.

Historical Context of Space Docking

- **United States (1966):** The first docking was achieved during NASA's Gemini VIII mission, where the spacecraft docked with the Agena target vehicle.
- **Soviet Union (1967):** The USSR demonstrated the first uncrewed, automated docking between Kosmos 186 and Kosmos 188. This achievement underscored their engineering prowess during the space race.
- **China (2011):** China's unmanned Shenzhou 8 spacecraft docked with the Tiangong 1 space laboratory. A year later, the nation achieved its first crewed docking with the Shenzhou 9 mission.

About Bharatiya Docking System (BDS)

Docking Mechanisms: The International Docking System Standard (IDSS), established in 2010, governs spacecraft docking with the International Space Station (ISS).

Indian Docking Mechanism:

- India employs an **androgynous docking system**, meaning identical systems are present on both the Chaser and Target satellites.
- Similar to IDSS but uses **two motors** instead of the 24 motors in the IDSS design.
- **Advanced Sensors and Technology:** Incorporates innovative sensors for precision measurements, including: Laser Range Finder, Rendezvous Sensor and Proximity and Docking Sensor
- These sensors facilitate accurate approach and docking processes.
- **Navigation Processor:** It features a new processor inspired by satellite navigation systems. Also, determines the relative position and velocity of the spacecraft.
- **Autonomous Docking Development:** It serves as a precursor to future autonomous docking systems. Also, aims to achieve docking without relying on satellite-based navigation data.

Exercise La Perouse

News: India's indigenous guided missile destroyer INS Mumbai is participating in the 5th edition of exercise La Perouse.

About Exercise La Perouse



Source- The Tribune

- The naval exercise is being organised in the straits between the Indian Ocean and the Pacific Ocean: **Malacca, Sunda and Lombok**.
 - These straits constitute important **sea lanes of communication**, emphasising their economic and strategic significance.
- The exercise aims to **strengthen military safety** and **develop common maritime situational awareness** by enhancing cooperation in the field of maritime surveillance, maritime interdiction operations, air operations.
- Navies from India, France, Indonesia, Australia, US, UK, Malaysia, Singapore, and Canada are participating in the exercise.
- The exercise will **feature complex multi-domain exercises** like surface warfare, anti-air warfare, air defence, cross deck landings and tactical manoeuvres and VBSS (Visit, Board, Search and Seizure) operations.

Jean-François de Galaup, Comte de La Pérouse

- He was a French Navy Officer and one of the greatest French Navigator of the 18th century.
- In 1785, he was entrusted by King Louis XVI to lead a global expedition to complete James Cook's discoveries in the Pacific and study the possibilities of trade with the countries visited.
 - During this global expedition, he commanded two frigates: the Boussole and the Astrolabe.
 - The expedition tragically ended in 1788 when the ship wrecked on the reefs of Vanikoro in the Solomon Islands.

Atomic Energy Commission (AEC)

News: The government has reconstituted the Atomic Energy Commission (AEC) to include T V Somanathan, the new Cabinet Secretary, and Manoj Govil, the newly appointed Expenditure Secretary.

About Atomic Energy Commission (AEC)

- The **Atomic Energy Commission (AEC)** was established in **August 1948** within the **Department of Scientific Research** later the Department of Atomic Energy (DAE) was set up on August 3, 1954.
- The **AEC** is responsible for **formulating policies** for the Department of Atomic Energy.
- The **Secretary to the Government of India** in the **DAE** serves as the **ex-officio chairman** of the AEC.
- Other **members of the Commission** are appointed annually based on the recommendation of the AEC chairman and with the **Prime Minister's approval**.

Reconstitution of the AEC

- The **reconstituted AEC** has **Ajit Kumar Mohanty**, Secretary of the Department of Atomic Energy, as its **Chairman**.
- **Ex-officio members** include:
 - **T.V. Somanathan** (Cabinet Secretary)
 - **Manoj Govil** (Expenditure Secretary)
 - **Pankaj Kumar Mishra** (Member, Finance, appointed last year)
 - **Ajit Doval** (National Security Adviser)
 - **Pramod Kumar Mishra** (Principal Secretary to the Prime Minister)
 - **Vikram Misri** (Foreign Secretary)
 - **Vivek Bhasin** (Director, Bhabha Atomic Research Centre)
- Other members comprise prominent former officials:
 - **M.R. Srinivasan** and **Anil Kakodkar** (former AEC chairpersons)
 - **P. Rama Rao** (former Secretary, Department of Science and Technology)
 - **Ravi B. Grover** (former Principal Adviser, DAE)
 - **K. Kasturirangan** (former Chairman, Space Commission)

Bharat Ranbhoomi Darshan

News: On the 77th Army Day (15th January), Defence Minister launched the “Bharat Ranbhoomi Darshan” website and app.

About Bharat Ranbhoomi Darshan



Source- The Indian Express

- The Bharat Ranbhoomi Darshan website will be a one-stop destination for information about **significant battlefields and border areas in India**, featuring virtual tours and historical narratives and interactive content.
- The initiative has been launched by the **Ministry of Defence** in collaboration with the **Ministry of Tourism**.
- The initiative **aims** to promote connectivity, boost tourism and socio-economic development in border regions.
- The Indian Army, along with Ministry of Tourism, has shortlisted sites alongside the country's border that have witnessed military action in the past for **battlefield tourism**.
 - These **sites include** Galwan, Doklam, Kibithoo and Bum La Pass and sites along the Line of Control (LoC) and Line of Actual Control (LAC).

Siachen Glacier

News: A private telecom service provider has deployed 4G and 5G connectivity services to Siachen Glacier.

About Siachen Glacier



Source: The Hindu

- Siachen Glacier is a **piedmont glacier** located in the **Karakoram Range of the Himalayas**.

- It lies between *Saltoro Ridge to the west* and the main *Karakoram range to the east*.
- It is the **world's second longest non-polar glacier**, after Fedchenko Glacier in Tajikistan.
- Siachen glacier is also known as the **Third Pole** as it contains more fresh water than is found anywhere else on Earth except for the polar ice caps.
- It is the **major source** of the *Nubra River*, a major tributary of the Shyok River.
- The Siachen Glacier is considered the **world's highest battleground** as India and Pakistan have fought for control of the Siachen Glacier.
 - In 1984, India took control of the glaciers under **Operation Meghdoot**.
- Studies suggest an **increased rate of melting of Siachen Glacier** in recent times due to climate change, heavy military presence, dumping of large amount of non-biodegradable wastes.

Bharathapuzha River

News: Recently, a family of four drowned in the Bharathapuzha River.

About Bharathapuzha River

- **Length of the river**– 209 km
- It is the *second-longest river in Kerala*, after the Periyar River.
- It is considered as the *Nile of Kerala* and is also known as Nila, Ponnani, Kuttippuram .
- **Course and Origin**– The river rises in the *Anaimalai Hills of Tamil Nadu*, flows westward through the Palakkad Gap in the Western Ghats, and finally empties into the Arabian Sea.
- **Major Tributaries:** Kannadipuzha, Kalpathipuzha, Gayathripuzha, and Thuthapuzha.
- Out of the total drainage area, two-thirds, which is 4400 sq.km., is in Kerala, and the remaining 1786 sq.km. is in Tamil Nadu.
- **Reservoirs and Dams:** The *Malampuzha Dam*, constructed across the river, is the largest reservoir in Kerala and is utilized for irrigation and hydroelectric power generation.
- **Cultural Significance**– Kerala Kalamandalam, a renowned center for Indian performing arts like *Kathakali, Koodiyattam, and Ottamthullal*, is located at Cheruthuruthy on the banks of the Bharathapuzha River in Thrissur district.

Palamau Tiger Reserve

News: The Jharkhand Forest Department has initiated a study to revive the dwindling population of Bison (also Known as Gaur) at Palamau Tiger Reserve.

About Palamau Tiger Reserve



Source-
palamautigerreserve.in

- Palamau Tiger Reserve is in the **western part of the Chotanagpur plateau**, and it is the **only tiger reserve in the state of Jharkhand**.
 - The tiger reserve is spread over **two districts**– Latehar and Garhwa and forms a part of the **Betla National Park**.
- It has an undulating topography with valleys, hills and plains. **Three rivers** that flow through the valleys include **North Koyal, Auranga and Burha**.
 - The area is draught prone with Burha being the only perennial river.
- The **geological formation** consists of gneiss and includes granite and limestone. The area is also very **rich in minerals** like Bauxite and Coal.
- The Palamau Tiger Reserve falls under the **Indo-Malayan realm** and is known for its floral and faunal diversity.
 - **Flora:** The vegetation in Palamau is primarily dominated by Sal forests, mixed deciduous forests and bamboo groves.
 - **Fauna:** Important keystone and principal species found in the reserve include Tiger, Leopard, Sambar, Four-horned Antelope, Pangolin, Indian Ratel, Cheetal, Wolf, Elephant, Mouse Deer, Indian Otter.
- Palamau has **good corridor connectivity** with other tiger habitats such as Bandhavgarh, Sanjay-Dubri, Achanakmar and Kanha Tiger Reserves. The important corridors include:
 - Palamau-Badakhhol-Achanakmar-Kanha
 - Palamau-Sanjay-Bandhavgarh

Chincholi Wildlife Sanctuary

News: The Kalaburagi district administration, in collaboration with the Forest Department, is persuading residents living inside Chincholi Wildlife Sanctuary to relocate from the ecologically fragile area.

About Chincholi Wildlife Sanctuary



Source- The Hindu

- It is in the Chincholi taluk of **Kalaburagi district of Karnataka**.
- The sanctuary was established in **2011**, and it holds the distinction of being the **first dry-land wildlife sanctuary in South India**.
- The sanctuary is famous for its floral and faunal diversity.
 - **Flora:** It is famous for several medicinal herbs and rare trees like red sanders and sandalwood. The dry deciduous and moist deciduous forest occupy the core regions with acacia and teak plantations on the fringes.
 - **Fauna:** The sanctuary is also home to diverse fauna like blackbuck, fruit bat, Indian wolf, common fox, four-horned antelope, black drongo, blossom-headed parakeet.
- **Chandrapalli dam**, along with four smaller dams, provides water to this wildlife sanctuary.
- It houses **Lambani Tandas** which is a **protected tribal community** living in the forests in harmony with nature.

Coffee Production in India

News: According to the Ministry of Commerce and Industry, India has emerged as the world's seventh-largest coffee producer, with exports reaching \$1.29 billion in FY 2023-24, almost double the \$719.42 million recorded in 2020-21.

About Coffee production in India



Source- PIB

- The **historical origin** of India's coffee production can be traced to 1600AD when **Baba Budan**, a holy saint, planted seven seeds of Mocha coffee in Baba Budan Giris in Karnataka.
 - The **commercial plantation of coffee** started only in 18th century owing to the efforts of British entrepreneurs.
- India produces **two major types** of coffee: **Arabica and Robusta**.
 - Arabica has a **higher market value** due to its mild aromatic flavour.
 - Robusta is used in **making various blends** due to its strong flavour.
- **Climate** required for coffee production:
 - It requires a **temperature** ranging **between 15°C and 28 °C**.
 - Ideal **annual rainfall** between **150 to 250 cm**.
 - Coffee requires a **warm and wet climate** and **well drained loamy soil**.
 - **Hill slopes** are more suitable for the growth of this crop.
- The **leading producer of coffee** in India is Karnataka followed by Kerala and Tamil Nadu.

About Coffee Board of India

- It is a statutory board established under the Coffee Act, 1942.
- Its aim is to promote sale and consumption of coffee in India and abroad.
- It functions under the administrative control of the Ministry of Commerce and Industry.
- The board is headquartered in Bangalore.

National Board for Wildlife (NBWL)

News: The National Board for Wildlife (NBWL) has rejected the Uttarakhand government's proposal to conduct soapstone mining near the Kedarnath Wildlife Sanctuary.

About National Board for Wildlife

- It is a *Statutory body* constituted by the Central Government under Section 5 A of the [Wildlife \(Protection\) Act, 1972 \(WLPA\)](#).
- It is worth noting that the Wildlife Act of 1972 did not originally include the NBWL. The NBWL was established later through an amendment in 2002.
- It replaced the *Indian Board for Wildlife*, which was formed in 1952.
- The NBWL is tasked with advising the government on wildlife conservation matters and granting approvals for projects within protected areas (PAs).
- According to the Wildlife Protection Act (WLPA), activities such as constructing tourist lodges, *altering PA boundaries*, diverting or destroying wildlife habitats, and de-notifying Tiger Reserves *cannot proceed without the NBWL's approval or recommendations*.

Structure of NBWL

- **Chairperson:** The Prime Minister.
- **Vice-Chairperson:** The Minister in charge of the Ministry of Environment, Forest, and Climate Change.
- **Member-Secretary:** The Additional Director General of Forests (Wildlife) & Director, Wildlife Preservation.
- **Members:**
 - 3 Members of Parliament (2 from Lok Sabha and 1 from Rajya Sabha).
 - 5 Non-Governmental Organizations (NGOs).
 - 10 eminent conservationists, ecologists, and environmentalists nominated by the central government.
 - Secretaries of various government departments.
 - The Chief of Army Staff.

Standing Committee of NBWL

- The Standing Committee is an *independent body under the NBWL*.
- It is *chaired by the Minister of Environment, Forest, and Climate Change*.
- It consists of not more than ten members nominated by the Minister from amongst the members of the NBWL.
- While the NBWL serves as a policy-making body that advises and contributes to the Central Government's wildlife protection policies, the Standing Committee primarily focuses on project clearances.

Dhanauri Wetland

News: The Principal Bench of the National Green Tribunal (NGT) has directed the Uttar Pradesh government to inform it of the status of notifying the Dhanauri waterbody as a wetland.

About Dhanauri Wetland



Source- The Indian Express

- It is in the **Dhanauri village** near Dankaur in **Uttar Pradesh**.
- It is nestled within the **floodplains of Yamuna Basin**.
- The wetland hosts more than **217 bird species**, including over 150 Sarus Cranes.
 - **Sarus Crane** is the **state bird of Uttar Pradesh**.
- The wetland has **over 20,000 waterfowl**, and supports 23 species of birds that are endangered, critically endangered and threatened.
- It has been recognised as an **Important Bird Area** by Bird Life International.
- Dhanauri is **yet to be recognised as a Ramsar site**.

About Ramsar Convention

- It is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.
- The convention was signed in Ramsar (Iran) in 1971 under the auspices of UNESCO and came into force in 1975.
- Article 1.1 of the Ramsar Convention defines wetland as “areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres”.
- It recognises 5 major types of wetlands: marine, estuarine, lacustrine, riverine and palustrine.

Kalaripayattu

News: The relegation of Kalaripayattu to the demonstration section of the 38th edition of the National Games has sparked off a political storm.

About Kalaripayattu



Source- The Indian Express

- It is one of the oldest and most scientific martial art forms in the world based on the **ancient knowledge of the human body**.
- It originated in **Kerala**. Myths credit the warrior sage **Parasurama** with establishing Kalarippayattu.
- The term Kalaripayattu is combination of two Malayalam words: **Kalari** (meaning training ground) and **Payattu** (meaning training of martial arts).
- The martial art involves **4 stages**:
 - **Maippayattu**- It is the body conditioning phase where the person is taught to prepare their body for a fight.
 - **Kolthari**- In the second stage, a person is taught attack and self-defence with the help of wooden weapons.
 - **Angathari**- In this stage, sharp metal objects are introduced after the person overcomes the fear of fighting with wooden weapons.
 - **Verumkai**- Research based bare hand fighting is emphasised in this stage to teach students body anatomy. The purpose is to make the person aware of what points they can hit and what they cannot.
- There are **two types** of Kalaripayattu:
 - **Northern**: In comparison to the southern type, more weapons are used, and all movements are in straight line- forward and backward.
 - **Southern**: The participants can move in any direction while practicing it.
- It is said that Kalarippayattu was introduced in **China by Bodhidharma** in the 5th century AD.
- The martial art was added to the **National List of Intangible Cultural Heritage of India in 2009**.