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National and International News

<p>INS Brahmaputra</p>	<p>Context:</p> <ul style="list-style-type: none"> • INS Brahmaputra, docked at Mumbai Dockyard for refitting, overturned after a fire broke out which is a significant damage. <p>About INS Brahmaputra:</p> <ul style="list-style-type: none"> • The INS Brahmaputra is a frigate of the Indian Navy, part of the Brahmaputra class. • Class: Brahmaputra-class frigate • Type: Guided-missile frigate • Displacement: Approximately 4,000 tons • Length: About 126 meters (413 feet) • Speed: Over 30 knots • Range: Approximately 4,500 nautical miles • Armament: Typically includes surface-to-surface missiles, anti-aircraft missiles, a range of naval guns, and torpedoes • Propulsion: Gas turbines and diesel engines • Role: Primarily tasked with anti-air, anti-surface, and anti-submarine warfare operations • Commissioned: 2000s (exact commissioning date varies by ship) • Homeport: Mumbai, Maharashtra, India • The INS Brahmaputra and its sister ships are designed to bolster India's naval capabilities and play a crucial role in maintaining maritime security. • Built by: State-run Garden Reach Shipbuilders & Engineers Limited. • It is the 1st of the indigenously built Brahmaputra-class guided missile frigates. • Commissioning: The INS Brahmaputra was commissioned in April 2000, making it the lead ship of its class. • Armament: It is equipped with a variety of weapons, including medium and close-range guns, surface-to-surface missiles, surface-to-air missiles, and torpedo launchers. These armaments enable it to engage a range of surface, sub-surface, and aerial threats. • Helicopter Support: The frigate supports operations involving Seaking and Chetak helicopters, enhancing its capabilities in anti-submarine warfare and search and rescue operations. • Dimensions: The ship measures 125 metres in length and
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	<p>has a displacement of approximately 5,300 tonnes, making it a sizable asset capable of enduring extended missions.</p> <ul style="list-style-type: none"> ● Crew: It houses a crew of about 40 officers and 330 sailors, indicating a significant human resource component essential for the operation and maintenance of the ship. <p>Fact:</p> <ul style="list-style-type: none"> ● Both INS Beas and INS Betwa — also named after rivers — are other ships in this class.
<p>Vishnupad and Mahobhodi Temples</p>	<p>Context:</p> <ul style="list-style-type: none"> ● The Union Finance Minister, Nirmala Sitharaman, announced comprehensive development programs for Vishnupad Temple in Gaya and Mahabodhi Temple in Bodhgaya, Bihar. ● These initiatives aim to make these temples world-class pilgrim and tourist destinations, modeled on the successful Kashi Vishwanath Corridor project. <p>About: Mahobhodi Temple: Historical Background</p> <ul style="list-style-type: none"> ● Origins: <ul style="list-style-type: none"> ○ Located in Bodh Gaya, India, the Mahabodhi Temple is where Siddhartha Gautama (the Buddha) achieved enlightenment around 589 BCE. ○ Emperor Ashoka established the original shrine in the 3rd century BCE. ● Development: <ul style="list-style-type: none"> ○ The temple has undergone various reconstructions and renovations, especially during the Gupta period (5th-6th centuries CE). ○ It stands as one of the earliest examples of brick architecture in India. ● Architectural Features ● Temple Structure: <ul style="list-style-type: none"> ○ The central tower (shikhara) of the Mahabodhi Temple is approximately 55 meters tall and is surrounded by four smaller towers. ● Sacred Sites: <ul style="list-style-type: none"> ○ The complex includes the Vajrasana (Diamond Throne) and the Bodhi Tree, a descendant of the tree under which the Buddha meditated. ○ Other significant sites include the Animeshlochan Chaitya and Ratnachakrama, representing events from the Buddha's seven weeks of meditation post-enlightenment. ● Spiritual Significance: ● Pilgrimage Site:



- It is a major pilgrimage destination for Buddhists worldwide, symbolizing enlightenment and central to Buddhist practice and reverence.
- **UNESCO World Heritage Site:**
 - Designated a **UNESCO World Heritage Site in 2002**, highlighting its cultural and historical importance.

Decline and Restoration

Periods of Decline:

- The temple experienced neglect following the **decline of Buddhist patronage and regional invasions**, leading to its abandonment until the **19th century**.

Restoration Efforts:

- Restoration began under British colonial administration, with key figures like **Sir Alexander Cunningham** and **Anagarika Dharmapala playing pivotal roles**.
- The **Bodh Gaya Temple Act of 1949** formalized the temple's management for its preservation.

Vishnupad Temple

Location and Historical Significance

Location:

- Situated in Gaya, Bihar, on the banks of the **Falgu River**.
- The temple is built around **Lord Vishnu's footprint**, believed to have subdued the demon Gayasura.

Pilgrimage Importance:

- An important Hindu pilgrimage site, especially for performing **"Pind Daan" rituals for ancestors**.

Architectural Features

Structure:

- Rebuilt by **Devi Ahilya Bai Holkar** in 1787, the temple is 30 meters tall with an **octagonal shrine and a 100-foot high pyramidal tower**.
- Constructed from large grey granite blocks joined with iron clamps.

Pillars and Pavilion:

- Features eight rows of intricately carved pillars supporting the pavilion.
- A silver-plated basin encircles the 40 cm footprint of Lord Vishnu, carved in solid granite.

Other Elements:

- Includes the sacred **Akshayavat tree for rituals for the dead**.
- Various other shrines, including the Mangla Gauri Temple, one of the 51 Shaktipeeths.



U-WIN Portal



Context:

- The government has launched **U-WIN**, a new online vaccine management portal, as part of its 100-day health agenda.
- This platform is designed to **digitize and individualize immunization records from birth**, aiming to reach the small proportion of children currently outside the vaccination net.

About:

- **Countrywide Rollout:** U-WIN, similar to the CoWIN platform used during the Covid-19 pandemic, is being piloted in several states, with national implementation imminent.
- **Registration Process:** Children up to six years old and pregnant mothers are registered using government ID like Aadhaar and mobile phone numbers.

Functionality of U-WIN:

- **Vaccination Records:** The platform maintains records of all **25 shots for children and two for pregnant mothers**.
- **Vaccination Certificate:** Generates a checkered vaccination certificate that color codes all vaccines. Dates of administered shots and due dates for the next set of vaccines are added to the card.
- **Reminder System:** Sends SMS reminders to parents before their children are due for the next dose.
- **Digital Accessibility:** Allows parents to download the digital vaccine certificate using their registered mobile numbers, eliminating the need for a physical vaccination booklet. Enables vaccination anywhere in the country and helps locate the nearest vaccination center and book slots.

Benefits for Health Workers:

- **Automated Due-List:** Generates a due-list of children in specific areas, aiding health workers.
- **Micro-Trend Analysis:** Once the database matures, it will help the government study micro-trends across different areas.

Additional Features:

- **Birth Registration:** Registers all births and records three vaccines administered at birth (**polio, hepatitis B, and tuberculosis**), **birth weight, and any physical deformities**.
- **Integration with Other Programs:** These data points can be used by other government programs, with the goal of eventually connecting all digital records through the **Ayushman Bharat Health Account (ABHA) ID**.



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Brown Dwarfs:

Context:

- Researchers utilized the **James Webb Space Telescope** to study the atmospheric conditions of the **two nearest brown dwarfs to Earth**.
- **Brown Dwarfs:** These celestial bodies are **larger than planets but smaller than stars, displaying extreme weather conditions**.

Key Findings:

- **Three-Dimensional Weather Analysis:** Webb provided a detailed 3D view of the weather changes during the brown dwarfs' rotation, revealing multiple cloud layers at various atmospheric depths.
- **Atmospheric Composition:** Dominated by hydrogen and helium, with traces of water vapor, methane, and carbon monoxide. Temperatures at cloud tops reach approximately 1,700 degrees Fahrenheit (925 degrees Celsius).

Brown Dwarf Characteristics:

- **Nature:** Brown dwarfs emit light due to their intense heat but lack nuclear fusion in their cores, distinguishing them from stars.
- **Clouds and Weather:** Unlike Earth, where clouds are made of water vapor, brown dwarf clouds consist of hot silicate particles, akin to a fiery Saharan dust storm.
- **Formation:** Formed from large gas and dust clouds, they lack sufficient mass to ignite nuclear fusion. Their mass ranges up to 80 times that of Jupiter.

Specific Observations:

- **Age and Size:** The studied brown dwarfs formed around 500 million years ago, with diameters similar to Jupiter's. One is 35 times more massive than Jupiter, the other 30 times.
- **Rotation and Weather Patterns:** Rapid rotation (7 hours for the larger, 5 hours for the smaller) influences weather patterns, potentially creating banded structures and vortices similar to Jupiter's Great Red Spot.

Scientific Implications:

- **Future Research:** Techniques used in this study could be applied to examine weather on potentially habitable exoplanets.
- **Infrared Observation:** Webb's infrared capabilities offer significant advancements in understanding the complex atmospheres of brown dwarfs compared to its predecessor, Hubble.

Conclusion:

- **Significance:** This research represents a substantial



leap in our comprehension of brown dwarf atmospheres, providing insights that could enhance future exoplanetary studies.

- **Expert Commentary:** Astronomers emphasize Webb's ability to monitor atmospheric layers comprehensively, paving the way for **deeper exploration of cosmic weather patterns.**

TRIPUT



Context:

- The **first of two Advanced Frigates** constructed by **Goa Shipyard Limited (GSL)** for the Indian Navy was launched on July 23, 2024.
- The launch took place at GSL, Goa.

Naming and Symbolism:

- The ship is named **Tripud**, symbolizing the mighty arrow.
- This name represents the Indian Navy's indomitable spirit and its capability to strike far and deep.

Design and Specifications:

- The Tripud class ships are designed for **combat operations against enemy surface ships, submarines, and aircraft.**
- **Dimensions:** 124.8 meters in length, 15.2 meters in width, and a draught of 4.5 meters.
- **Displacement:** Approximately 3600 tons.
- **Maximum speed:** 28 knots.
- **Features:** Equipped with stealth features, advanced weapons and sensors, and platform management systems.
- Indigenous Construction and Strategic Importance

Indigenous Efforts:

- The Tripud class ships are **follow-on ships to the Teg and Talwar class ships acquired from Russia.**
- These frigates are being constructed indigenously by an Indian shipyard for the first time.

Aatmanirbhar Bharat Initiative:

- A significant percentage of the equipment, including weapons and sensors, is of indigenous origin.
- This initiative ensures that **large-scale defense production is executed by Indian manufacturing units.**
- **Benefits:** Generates employment and enhances capabilities within the country.

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