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National and International News

INS Brahmaputra

Context:

- **INS Brahmaputra**, docked at Mumbai Dockyard for refitting, overturned after a fire broke out which is a significant damage.

About INS Brahmaputra:

- 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 has a displacement of approximately 5,300 tonnes, making it a sizable asset capable of enduring extended missions.
- **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.

Fact:

- 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: <ul style="list-style-type: none"> It is a major pilgrimage destination for Buddhists worldwide, symbolizing enlightenment and central to Buddhist practice and reverence. UNESCO World Heritage Site: <ul style="list-style-type: none"> Designated a UNESCO World Heritage Site in 2002, highlighting its cultural and historical importance. <p>Decline and Restoration Periods of Decline:</p> <ul style="list-style-type: none"> The temple experienced neglect following the decline of



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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



	<p>states, with national implementation imminent.</p> <ul style="list-style-type: none"> ● Registration Process: Children up to six years old and pregnant mothers are registered using government ID like Aadhaar and mobile phone numbers. <p>Functionality of U-WIN:</p> <ul style="list-style-type: none"> ● 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. <p>Benefits for Health Workers:</p> <ul style="list-style-type: none"> ● 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. <p>Additional Features:</p> <ul style="list-style-type: none"> ● 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.
<p>Brown Dwarfs:</p>	<p>Context:</p> <ul style="list-style-type: none"> ● 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. <p>Key Findings:</p> <ul style="list-style-type: none"> ● 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:



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- 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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