

LEAP YEAR 2024



February 29th only comes once every four years – but what exactly is a leap year and why was an extra calendar day needed?

Accounting for Earth's True Revolution

- A solar year equals one full revolution of Earth around the sun. This takes 365 days plus 5 hours, 48 minutes and 46 seconds.
- Early calendars just approximated 365 days. But the extra hours aggregated over centuries. To compensate, an extra day is added to February every four years.
- This realigns the calendar with Earth's rotation and prevents seasons drifting. The day is in February as it's the shortest month.

When Was the Concept Introduced?

The Gregorian Fix

- Pope Gregory XIII also devised a long term solution – dropping leap years for most years ending in double zeroes.
- This prevented excess day buildup from too many quadrennial additions. However, exceptions were 400-divisible years like 2000.
- The refinement finally aligned the Gregorian calendar with Earth's tropical orbit to within 26 seconds.

ISRO LAUNCHED XPOSAT ABOARD PSLV-C58

- The **Indian Space Research Organization (ISRO)** has launched the **PSLV-C58 X-ray Polarimeter Satellite (XPoSat)**.
- The PSLV, in its 60th mission, lifted off at 9.10 a.m. on 1 Jan, from the Satish Dhawan Space Centre in Sriharikota, and 22 minutes later launched the XPoSat into an eastward low inclination orbit.

- The PSLV-C58 has placed the primary satellite at the XPoSat in the desired orbit of 650 km with six-degree inclination.
- XPoSat is the first dedicated scientific satellite from the ISRO to carry out research in space-based polarisation measurements of X-ray emission from celestial sources. It carries two payloads, namely POLIX (Polarimeter Instrument in X-rays) and XSPECT (X-ray Spectroscopy and Timing).
- POLIX has been developed by Raman Research Institute (RRI) Bengaluru and XSPECT by Space Astronomy Group of URSC, Bengaluru.
- The successful launch of the XPoSAT put India in an elite category, as it has become the second nation to send an observatory to study astronomical sources, such as black holes, neutron stars, among others.

About Indian Space Research Organization (ISRO)

- **Founded** – 15 August 1969
- **Headquarters** – Bangalore, Karnataka
- **Founder / 1st Chairman** – Vikram Sarabhai
- **10th Chairman** – S Somanath
- Aryabhata India's first satellites Launched on 19 April 1975

10TH EDITION OF SAGAR PARIKRAMA



India's Fisheries Minister Parshottam Rupala inaugurated the 10th edition of Sagar Parikrama – a coastal yatra spreading awareness about government welfare schemes among fishermen.

Key Focus Areas

The 15-day journey spans fishing harbors and villages across Andhra Pradesh and Puducherry. Interactions center on:

- Familiarizing beneficiaries with existing initiatives
- Distributing assets provisioned under fisheries development schemes
- Facilitating credit access through fisher Kisan Credit Cards
- Addressing grievances and ground realities

It also explores sustainable fishing opportunities while recognizing exemplary efforts.

Sagar Parikrama signifies the government's hands-on approach to further empower the fishing community.

The coast-to-coast outreach drive promotes participatory last-mile delivery across the fisheries value chain.

Officials hope that translating training and assets into enhanced, sustainable marine productivity will unlock the sector's immense growth potential.

NINA SINGH BECOMES FIRST WOMAN CHIEF OF INDUSTRIAL SECURITY FORCE

Senior Indian Police Service officer Nina Singh took charge as Director General of the Central Industrial Security Force (CISF) recently. She became the first woman to head the specialized security organization and the 30th CISF Director General.

Career Highlights

Singh is a high-achieving 1989-batch officer from the Rajasthan cadre. Key accomplishments include:

- First woman IPS officer in Rajasthan's history
- Headed the State Commission for Women
- Joint Director at CBI overseeing major criminal probes
- Co-authored research on police reforms with Nobel laureates

Her illustrious 34-year tenure has imparted extensive policing expertise across domains. She also holds masters degrees from JNU and Harvard.

Trailblazer in Security

As CISF Chief, Singh will spearhead the force guarding vital public infrastructure like airports, metro rails, ports and nuclear sites.

Her pioneering appointment underscores the government's commitment to women leadership in critical policing roles.

Singh earned numerous honors including the President's Police Medal for Meritorious Service and the Indira Gandhi Priyadarshini Award.

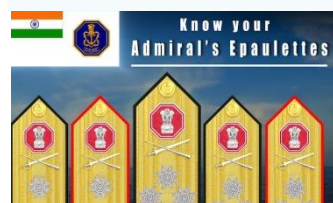
About the Central Industrial Security Force (CISF)

The CISF is a specialized Indian federal police agency under the Home Ministry. It is one of the Central Armed Police Forces guarding key national infrastructure.

The CISF provides security cover to over 356 industrial units and sites across India. These include:

- Atomic power plants
- Space installations
- Mines and oil fields
- Major ports and airports
- Heavy manufacturing plants
- Dams and power plants
- Currency presses

INDIAN NAVY ADOPTS NEW RANK INSIGNIA INSPIRED BY SHIVAJI



Aligning with the PM's call to shed vestiges of colonialism, the Indian Navy has unveiled redesigned shoulder insignia for top Admirals incorporating elements from Chhatrapati Shivaji Maharaj's royal seal.

Octagonal Shape Based on Naval Ensign

The new epaulettes feature an octagon – drawn from the Navy’s crest added to the ensign last year – crossed by an Indian sword and telescope.

Stars over it indicate Admiral ranks. The move manifests the service embracing its heritage and identity.

Connection to Shivaji

The octagonal shape specifically references the seal of 17th century Indian ruler Shivaji, famed for pioneering naval warfare against colonial forces.

Using his royal stamp’s iconography highlights the Navy’s native lineage while ditching British-era legacy.

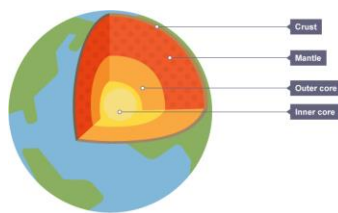
Wider Indianization Push

Alongside the shoulder insignia shift, the Navy will rename officer ranks to reflect Indian traditions rather than Anglicized conventions.

The changes reinforce the PM’s stated goal of shedding lingering vestiges of slave mentality since the colonial era.

They signify the Indian armed forces proudly reclaiming indigenous customs, culture and symbols to motivate soldiers to defend the motherland.

CHINA LAUNCHES MASSIVE SHIP TO DRILL INTO EARTH’S MANTLE



China has built an enormous ocean drilling vessel called the Mengxiang to achieve humanity’s first-ever excavation into the Earth’s upper mantle. The ambitious mission could uncover clues about our planet’s inner workings and evolution.

An Engineering Marvel

The supersized Mengxiang can withstand fierce storms while drilling 11,000 meters beneath the seafloor thanks to:

- Cargo capacity of 33,000 tonnes
- Length of 179 meters
- Specially designed stabilization

It can traverse 15,000 nautical miles over 120 days between port calls.

Destination: The Mantle

The Mengxiang aims to breach the Mohorovičić discontinuity (Moho) about 7 km down. This boundary separates the crust from the mantle.

No prior missions have sampled the mantle, home to unique rock composition and extreme pressures and temperatures.

Past efforts since the 1960s have drilled the oceanic crust, discovering invaluable knowledge. But the mantle has remained elusive.

Scientific Potential

Reaching the mantle could provide insights on:

- Plate tectonics
- Crust formation and magnetism
- Deep sea organisms
- Energy sources

Some even speculate seemingly habitable environments exist, though proof remains absent.

Hurdles Ahead

While recent Mengxiang tests focused on propulsion, challenges persist regarding drilling feasibility. Sophisticated techniques will be needed to bore through ultra-hot lower crust without failure.

GLOBAL FAMILY DAY 2024

Global Family Day, observed annually on January 1st, sets the tone for the new year with a message of unity, love, and appreciation for the families we cherish. In 2024, the day takes on even greater significance, reminding us of the importance of connection and solidarity in a world navigating evolving realities.

Ways to Celebrate Global Family Day 2024

- **Reach out:** Make a conscious effort to connect with family members near and far, whether through a phone call, video chat, handwritten letter, or a thoughtful gift.
- **Share stories and traditions:** Revisit family history, celebrate cultural heritage through recipes, music, or games, and create new traditions that reflect your evolving family dynamics.
- **Engage in volunteer activities:** Strengthen your family bond by giving back to your community, volunteering at a local shelter, or supporting a cause close to your family's values.
- **Plan a fun family outing:** Enjoy a nature walk, visit a museum, have a game night, or simply cook a delicious meal together, cherishing the moments of joy and laughter.
- **Start a family time capsule:** Write letters to your future selves, collect mementos of your present life, and bury them to be opened years later, creating a time travel experience for your future family.

NATIONAL INVESTIGATION AGENCY (NIA)

About National Investigation Agency (NIA)

- **Institutional Establishment:**
 - **The Union government** enacted the **National Investigation Agency (NIA) Act** after the wake of the 26/11 Mumbai terror attack in November 2008 and it is presently functioning as the **Central Counter Terrorism Law Enforcement Agency in India.**

- **Objectives:**

- To be a thoroughly **professional investigative agency** matching the best international standards.
- To set the standards of excellence in counter terrorism and other national security related investigations at the national level by developing into a highly trained, partnership oriented workforce.
- Ensuring **effective and speedy trial**.
- Creating deterrence for existing and potential terrorist groups/individuals.
- To develop as a storehouse of **all terrorist related information**.

Jurisdiction:

- The law under which the agency operates extends to the **whole of India** and also applies to Indian citizens outside the country.
- Persons in the service of the government wherever they are posted.
- Persons on ships and aircraft registered in India wherever they may be.
- Persons who commit a scheduled offence beyond India against the Indian citizen or affecting the interest of India.

NIA (Amendment) Act 2019:

- It empowers the NIA to probe terror attacks targeting Indians and Indian interests abroad.
- Investigation can also be conducted in other offenses such as human trafficking; circulation of fake currency; manufacture and sale of prohibited arms; and cyber-terrorism.
- The law included **Section 66-F of the Information Technology Act** in the schedule of the NIA Act, which pertains to cyber terrorism and prescribes punishment extending to life imprisonment.

NIA Special Courts:

CROSS & CLIMB ROHTAK

- Various Special Courts have been notified by the Govt. of India for trial of the cases arising out of offences committed in various states of the Union.
 - **Appeal:** An appeal shall lie from **any judgement, sentence or order, not being an interlocutory order, of a Special Court to the High Court** both on facts and on law.
 - Every appeal shall be **heard by a bench of two Judges of the High Court** and shall, as far as possible, be disposed of within a period of three months from the date of admission of the appeal.
 - **Power of State Government to constitute Special Courts:** The State Government may constitute **one or more Special Courts for the trial of offences** under any or all the enactments specified in the Schedule.
-