

Project DANTAK completes 60 years in Bhutan



- Project DANTAK is commemorating its Diamond Jubilee in Bhutan. Indian Ambassador to Bhutan Smt Ruchira Kamboj laid a floral wreath at the DANTAK Memorial in Simtokha on April 24, 2021.
- Project DANTAK was established on April 24, 1961 as a result of the visionary leadership of His Majesty the Third King and then Prime Minister Jawahar Lal Nehru.
- Identifying the utmost importance of connectivity in spurring the socio-economic development and growth of Bhutan, DANTAK was tasked to construct the pioneering motorable roads in the Kingdom.
- DANTAK completed the road connecting Samdrup Jongkhar to Trashigang in 1968.
- In the same year, Thimphu was connected to Phuentsholing by DANTAK.
- Many Bhutanese had also volunteered to work with DANTAK.
- Over the years, DANTAK has met the myriad infrastructure requirements in Bhutan in accordance with the vision of Their Majesties and the aspirations of the people in a symbiotic manner.
- Some other notable projects executed by the project include the construction of Paro Airport, Yonphula Airfield, Thimphu – Trashigang Highway, Telecommunication & Hydro Power Infrastructure, Sherubtse College, Kanglung and India House Estate.
- As DANTAK celebrates six decades in Bhutan, the project reaffirms its commitment to support the march of Bhutan towards realising the dreams of His Majesty Druk Gyalpo, the plans of the Royal Government of Bhutan and aspirations of the people of the kingdom.

DRDO develops Single Crystal Blades for helicopter engine application



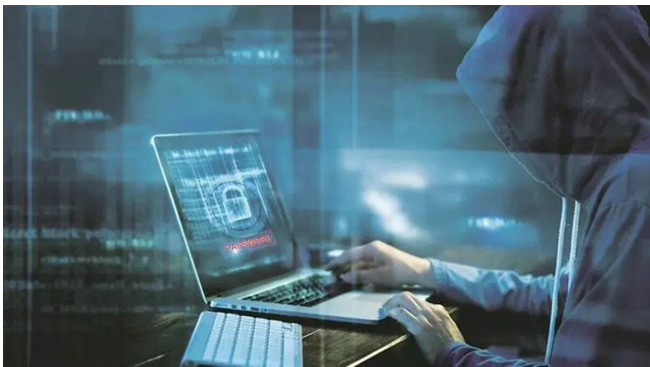
- Defence Research and Development Organisation (DRDO) has developed single crystal blades technology and supplied 60 of these blades to Hindustan Aeronautics Limited (HAL) as part of their indigenous helicopter development program for helicopter engine application.
- It is part of a program taken up by Defence Metallurgical Research Laboratory (DMRL), a premium laboratory of DRDO, to develop five sets (300 in number) of single crystal high pressure turbine (HPT) blades using a nickel-based super alloy. The supply of remaining four sets will be completed in due course.
- Helicopters used in strategic and defence applications need compact and powerful aero-engines for their reliable operation at extreme conditions.
- To achieve this, state-of-the-art Single Crystal Blades having complex shape and geometry, manufactured out of Nickel based superalloys capable of withstanding high temperatures of operation are used.
- Special ceramic composition had to be formulated for making strong ceramic moulds which can withstand metallostatic pressure of liquid CMSX-4 alloy at 1500°C and above during casting operation.
- The challenge of maintaining the required temperature gradient has also been overcome by optimising the casting parameters.
- A multi-step vacuum solutionising heat treatment schedule for complex CMSX-4 superalloy to achieve the required microstructure and mechanical properties has also been established

Chloé Zhao wins Oscar award for best director



- Chloé Zhao has made history by becoming the first woman of colour - and the second woman to win the best director award at the Oscars.
- Chinese-born, British-educated, US-based 39-year-old Zhao also won best picture for Nomadland, her third feature film.
- All three have been quietly compelling portraits of people, often played by non-professional actors, in the margins of society in the American West.
- But her next film will be a departure - a Marvel comic blockbuster. Eternals.

CYBERCRIME VOLUNTEER



- The Union Home Ministry has said it does not maintain a centralised list of volunteers enrolled under the cybercrime volunteer programme since the police is a “State subject” under the Seventh Schedule of the Constitution.
- The Ministry, through its cybercrime grievance portal, cybercrime.gov.in, aims to raise a group of “cybercrime volunteers” to flag “unlawful content” on the Internet.
- A digital rights group, the Internet Freedom Foundation (IFF), has said the programme enables a culture of surveillance and could create potential social distrust by encouraging civilians to report the online activities of other citizens.
- In response to a RTI application on the total number of volunteers who have applied under the Cybercrime Volunteers Programme of the National Cybercrime Reporting Portal, the Ministry said the information could be sought directly from the respective States and Union Territories.
- The programme was expected to include 500 volunteers, 200 “cyber awareness promoters” and 50 “cyber experts”.
- The National Cybercrime Ecosystem Management Unit, of which the Cybercrime Volunteers Programme is a constituent, is part of the Indian Cybercrime Coordination Centre (I4C) scheme launched by Union Home Minister Amit Shah in January 2020.
- The project was approved in October 2018 at an estimated cost of ₹415.86 crore.
- The I4C scheme that includes other components also has been allocated ₹69.80 crore in the 2021-22 Budget.

LIQUID OXYGEN



- Invoking the Disaster Management Act, the Centre ordered States that all liquid oxygen, including the existing stock with private plants, should be made available to the government and will be used for medical purposes only.
- Liquid oxygen—abbreviated LOx, LOX or Lox in the aerospace, submarine and gas industries—is the liquid form of molecular oxygen.
- Liquid oxygen has a pale blue color and is strongly paramagnetic: it can be suspended between the poles of a powerful horseshoe magnet.

- Because of its cryogenic nature, liquid oxygen can cause the materials it touches to become extremely brittle.
- Liquid oxygen is also a very powerful oxidizing agent: organic materials will burn rapidly and energetically in liquid oxygen.
- It was used as the oxidizer in the first liquid-fueled rocket invented in 1926 by Robert H. Goddard, an application which has continued to the present.
- In commerce, liquid oxygen is classified as an industrial gas and is widely used for industrial and medical purposes.
- Liquid oxygen is obtained from the oxygen found naturally in air by fractional distillation in a cryogenic air separation plant.
- Liquid oxygen is the most common cryogenic liquid oxidizer propellant for spacecraft rocket applications, usually in combination with liquid hydrogen, kerosene or methane.

MARIB



- Yemen's Houthi rebels have taken full control of the northwest Kassara battlefield, advancing close to the centre of Marib city despite heavy casualties.
- Marib is the capital city of Marib Governorate, Yemen.
- It was the capital of the ancient kingdom of Saba' which some scholars believe to be the ancient Sheba of biblical fame.
- It is located in the region of the Sarawat Mountains.
- Marib and its surrounding oil fields make up the last significant pocket of government-held territory in the north, the rest of which is under rebel control, including the capital Sanaa.
- The loss of Marib would be a major blow for the Yemeni government and for Saudi Arabia which has supported its military since March 2015, after the rebels captured Sanaa.

DEEP TIME STUDY



- A group of French volunteers have emerged from a cave after a 40-day study exploring the limits of human adaptability to isolation.
- The so-called Deep Time experiment came to an end, allowing the eight men and seven women, aged 27 to 50, who took part to leave the cave.

- The 15 participants lived in the Lombrives cave in south-west France with no phones, clocks or sunlight. They slept in tents, made their own electricity, and had no contact with the outside world.
- The project aimed to test how people respond to losing their sense of time and space.
- During their isolation, the group had to organise tasks without being able to use a measure of time to create deadlines.
- Instead, they had to rely on their body clocks and sleep cycles to structure their days.
- In the cave, they had few modern comforts at their disposal. For example, volunteers had to generate their own electricity with a pedal bike and draw water from a well 45 m (146 ft) below the earth.

PM CARES FUND



- Prime Minister Narendra Modi has ordered setting up of 551 oxygen plants inside government hospitals across the country.
- PM CARES Fund will provide financial aid in setting up these plants.
- The Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund (PM CARES Fund).
- It was created on 27 March 2020, following the COVID-19 pandemic in India.
- The fund will be used for combating, and containment and relief efforts against the coronavirus outbreak and similar pandemic like situations in the future.
- Prime Minister of India, Narendra Modi, is the chairman of the fund, and trustees include the Minister of Defence, Rajnath Singh; Minister of Home Affairs, Amit Shah, and Minister of Finance, Nirmala Sitharaman, in the Government of India.
- Donations to this fund will be exempted from income tax under section 80(G).

India has recorded 30 percent increase in agricultural export in 2020-21



- Around 1.3 lakh crore rupees of export business was recorded last year in comparison to 1.1 lakh crore rupees in previous financial year.
- The pandemic gave an opportunity to India to provide reliable food and nutritional support to the world.
- APEDA Chairman said that there was also 40 percent increase in export of organic products this year in comparison to last financial year. He said that there was huge demand for herbal and medicinal products in Europe, US and Middle East and APEDA is all set to explore all the options

Jackfruit gets a brand name 'Thalir'



- The first ever jackfruit collection and processing centre, organised under the aegis of the State government under the Vegetable and Fruit Promotion Council Keralam (VFPCCK), has launched sale of jackfruit, ready to eat, under the brand name 'Thalir.'
- This is the first time that efforts are being made to sell the widely available fruit in a brand name, utilising its popularity as well as its great qualities as a food item.
- The branded jackfruit comes with traceability. Each of the farmers, who supply the fruit to the VFPCCK centre near Thodupuzha, will provide details of the origin so that the buyers are able to get value for their money.
- The Kerala government has declared Jackfruit as the official fruit of the state.
- Jackfruit is an exotic fruit grown in tropical regions of the world. It is native to South India.
- It is part of the Moraceae plant family, which also includes fig, mulberry and breadfruit. Jackfruit has a spiky outer skin and is green or yellow in color.
- One unique aspect of jackfruit is its unusually large size. It is the largest tree fruit in the world and can reach up to 80 pounds (35 kg) in weight.
- The largest tree-borne fruit in India, jackfruit is known for its distinct flavour and aroma.
- The fruit is drought tolerant, insect resistant, and highly nutritious, with roots that reach to the moist subsoil.
- As a result, jackfruit is grown organically and naturally, without the use of artificial fertilisers or pesticides.
- A jackfruit tree can produce over 150 fruits per year and can live for over 100 year

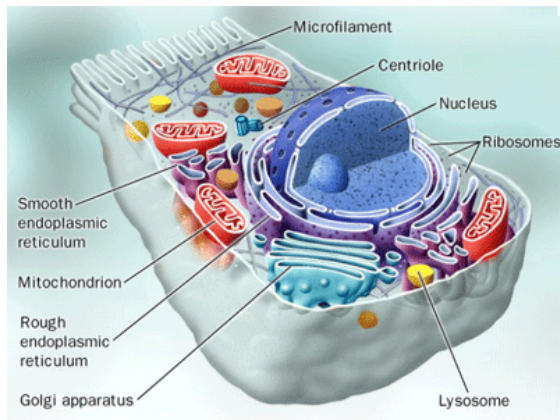
Operation Barkhane



- Operation Barkhane is an ongoing anti-insurgent operation started on August 1, 2014 which is led by the French military against Islamist groups in Africa's Sahel region.
- It consists of a roughly 5,000-strong French force, which is permanently headquartered in N'Djamena, the capital of Chad.

- The operation is led in cooperation with five countries, all former French colonies, that span the Sahel: Burkina Faso, Chad, Mali, Mauritania and Niger.
- These countries are collectively referred to as the “G5 Sahel”. The operation is named after a crescent-shaped dune in the Sahara desert.
- The French military initially intervened in Mali in early 2013 as part of Operation Serval which successfully regained the northern half of the country from Islamist groups.
- Operation Barkhane is intended to act as a follow up to this success and has expanded the French military’s operations over a vast area of the Sahel region.
- The operation has the stated aim of helping these countries’ governments to maintain control of their territory while also preventing the region from becoming a safe haven for Islamist terrorist groups planning to attack France and Europe.

Lysosomal Storage Disorder (LSD)



- Within cells, lysosomes are the main digestive units. Their job is to deconstruct complicated components into simpler ones.
 - They break down complex substances like proteins (substrates) into simpler ones.
 - As this mechanism is disrupted by an enzyme deficiency, toxic substrates begin to build up in the cells.
- This is why these illnesses are referred to as “storage diseases.”
 - As a result of enzyme defects, Lysosomal storage diseases are inherited metabolic diseases characterised by an excessive build-up of various toxic materials in the body’s cells.
 - The majority of lysosomal storage disorders are autosomal recessive in nature.
 - There are nearly 50 of these disorders in total, and they can affect the skeleton, brain, skin, heart, and central nervous system, among other body parts.
 - Many lysosomal storage diseases currently have no accepted treatments.

Beavers chew through fiber cable, disrupt internet in Canada



- Internet service was down for about 900 customers in Tumbler Ridge in Canada after beavers chewed through a crucial fiber cable, causing "extensive" damage.
- Local internet provider Telus said beavers chewed through its cable which is buried underground and protected by a 4.5-inch thick conduit.
- Telus said the beavers used their materials to build their homes.

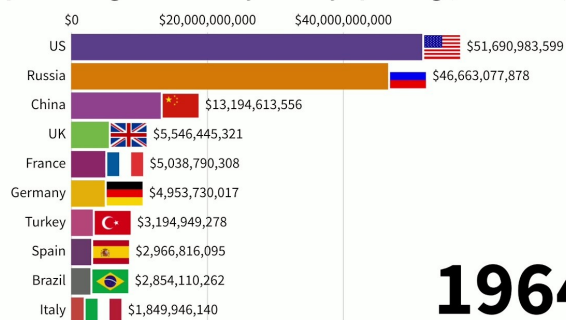
NASA's Mars helicopter flies faster, further than ever on 3rd flight



- NASA's Ingenuity helicopter made its third successful flight on Mars and flew higher and faster than it did even when it was being tested on Earth.
- The helicopter ascended 16 feet and flew 164 feet during its 80-second third flight, at a top speed of 6.6 feet per second. The flight was recorded by Mastcam-Z imager aboard Perseverance rover.

Which countries were the top 10 military spenders in 2020?

Top 10 Strongest Armies By Military Spending (1914-2020)



1964 •

- Ten countries in the world spent \$1,482 billion on military requirements, accounting for 75% of global military spending, in 2020, according to Stockholm International Peace Research Institute (SIPRI).
- SIPRI named US (\$778 billion), China (\$252 billion) and India (\$72.9 billion) as the top 3 military spenders. These were followed by Russia, UK, Saudi Arabia, Germany, France, Japan and South Korea.

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