Prelim Bits 19-06-2022 & 20-06-2022 | UPSC Daily Current Affairs

Bird Strike

Recently, bird strike incidents are happening more often. Following these incidents, the aircrafts had to return back to their origin airports and were grounded for maintenance.

- Bird strikes are among the most common threats to aircraft safety.
- They typically occur during the **take-off or landing phases** of a flight.
- **Cases** - Typically, when birds collide with an aircraft's airframe, it is unlikely to cause significant problems for the pilots flying.
- But there are cases where the aircraft engine ingested the birds causing damage to the power plants. This can lead to a loss of thrust for the engine and cause manoeuvrability problems for the crew.
- Generally, the pilots will declare an emergency and land the plane on the ground at the closest airport.
- In some cases, bird hits also happen at higher altitudes when a plane is cruising.
- These are more dangerous than the low-altitude hits given that they can cause rapid depressurisation of cabins.
- **Criticality to air safety** - Smaller planes would generally be more susceptible to the dangers of bird strikes than larger ones.
- As the bird strikes mostly happen during take-offs and landings, these incidents could distract the pilots during what are highly critical phases of a flight that demand the complete attention of the crew.
- **Causes of bird strikes** - The presence of birds around an airfield increases the chances of a bird strike.
- In monsoons, as water puddles emerge in open grounds attracting insects to breed, it increases the presence of birds in these regions.
- Other reasons for bird activity around an airfield could be the presence of landfills or waste disposal sites that attract a large number of birds.
- Also, other food sources near airport can contribute to bird strikes.
- **Solution** - A recent study has found that planes painted in dark colours attract more birds, and hence increasing the chances of a bird strike.
- The contrasting brighter shade fuselages blend with the sky and help the bird avoid the plane.
- Another study has found out that planes with eyes drawn at the jet engine spinners could be an efficient way to scare off birds.

The Ministry of Civil Aviation and the Directorate General of Civil Aviation (DGCA) have recognized wildlife strikes, including bird and animal hits, to aircraft as one of the "State Safety Priority".

The DGCA (aviation regulator) regularly carries out aerodrome inspections that are considered critical with regard to wildlife strikes.

Reference

1. https://www.business-standard.com/article/economy-policy/spicejet-plane-returns-to-patna-after-bird-hit-causes-engine-fire-122061900700_html
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Svadha

The Centre of Excellence for Khadi (COEK) has designed a range of 'Wellness wear' 'Svadha' to showcase the versatility of khadi on International Yoga Day.

> In Atharva veda, 'Svadha' means ease, comfort or pleasure.

- This 'Wellness wear' was designed by COEK keeping in view the core ideology of Yoga.
- The 'Svadha' range emphasizes the values of mindfulness and perseverance and is aimed to attract all age groups.
- The wellness wear has used hand-spun khadi in natural hues.
- The thread of khadi binds the people globally in true sense towards '**Vasudhaiva Kutumbakam**'- the world is one family.

Center of Excellence for Khadi

- Center of Excellence for Khadi (CoEK) has been set up by Khadi and Village Industries Commission (KVIC), Ministry of MSME.
- It is set up at 5 National Institute of Fashion Technology (NIFT) campuses as a **Hub & Spoke Model** (Hub - Delhi; Spoke -Gandhinagar, Kolkata, Shillong and Bengaluru).
- It has the objective to help Khadi Institutions (KIs) to effectively design, produce and market high quality differentiated khadi products in the Indian and global market.
- The COEK will be aimed at designing apparel, home furnishing, and accessories for people from different age groups.

Reference

1. https://pib.gov.in/PressReleasePage.aspx?PRID=1835418
2. https://www.nift.ac.in/shillong/sites/shillong/files/2021-06/CoEK%20recruitments-%20Matter%20for%20NIFT%20website.pdf

West Seti Hydro Power Project

West Seti Hydro Power Project is India's hydropower project in Nepal.

> Nepal is rich in power sources with around 6,000 rivers and an estimated potential for 83,000 MW.

- The 750-megawatt (MW) West Seti Hydroelectric Project is proposed in Far-Western Development Region (FWDR) in Nepal.

- Since India was Nepal's power market and it had a 'policy of not buying power from China-executed projects', West Seti is given to India.
- It will be handled by India's National Hydro Power Corporation (NHPC).
- The West Seti Project is a **storage scheme** designed to generate and export large quantities of electrical energy to India.
- It will generate electrical energy throughout the year, storing excess wet season river flows in the reservoir, and using this water to generate energy during peak demand periods in the dry season.
- In 2018, the CWE Investment Corporation had informed the Nepal Government that it would not be able to execute this project.
- [The CWE Investment Corporation is a subsidiary of China Three Gorges Corporation.]
- **Other Nepal projects** undertaken by India are the Mahakali treaty (1996), the Upper Karnali project, 900-MW Arun Three project in eastern Nepal's Sankhuwa Sabha,

Reference

1. https://indianexpress.com/article/explained/what-west-seti-power-project-can-mean-for-india-nepal-ties-7979073/
2. https://www.adb.org/sites/default/files/project-document/65914/40919-nep-seia.pdf

Gaia Space Mission

The third set of data was released by the European Space Agency's Gaia mission. It has revealed the surprise phenomena of 'starquakes'.

- Gaia is an ongoing **astronomical observatory mission.**
- It was launched by the European Space Agency (ESA), in 2013, using a Soyuz rocket. It started scientific screening in 2014.
- **Purpose** - Gaia has the objective of creating the most accurate and complete **3D map of the Milky Way** by surveying 1% or one billion of the galaxy's 100 billion stars.
- This information allows astronomers to reconstruct the galaxy's past and future evolution over billions of years.
- The almost hat-shaped spacecraft is fitted with two optical telescopes and the largest digital camera in space or the **billion-pixel camera**, with over 100 electronic detectors.

- **Station** - The spacecraft is strategically stationed 1.5 million km from the Earth, in the opposite direction of the sun'
- It is located in an orbit around the gravitational parking point in space called the **Lagrange 2** or L2.
- It is from here that Gaia charts the accurate positions, motions, velocity, brightness, temperature, and composition of stars in the galaxy and other celestial objects beyond it.
- **Techniques** - In order to study the stars and objects, Gaia is also equipped with screening and imaging systems that employ three techniques - astrometry, photometry, and spectroscopy.

Techniques	Purpose
Astrometry	Science of measuring the movement and position of stars within the plane of the sky.

Photometry	Studies the colour, brightness and other derived properties of stars.
Spectroscopy	Measures the radial velocity or the movement of stars towards or away from us by studying stellar spectra or the fingerprints of stars.
	(Spectra are obtained by passing the light from a star through a prism which splits it into a spectrum of colours.)

- Gaia's predecessor, ESA's Hipparcos mission, had mapped the precise positions of 100,000 stars and could gaze 1,600 lightyears away.
- Gaia, meanwhile, can chart starts and objects as far as 30,000 lightyears.
- The raw data observed by the Gaia spacecraft is processed into meaningful scientific information by the Gaia Data Processing and Analysis Consortium (DPAC), a group of 400 scientists.
- **Data** - Gaia's data release was planned in four tranches - 2016, 2018, 2022, 2030. Gaia would have been done mapping the skies in 2025.

Starquakes

- 'Starquakes' are massive tsunami-like movements or massive vibrations on the surface of the stars.
- These tsunamis on the surface of stars can change their shape.
- Gaia is opening a goldmine for 'asteroseismology' of massive stars.
- [Asteroseismology is the study of oscillations in stars. It is the science that studies the internal structure of stars by the interpretation of their frequency spectra.]
- **Similar Links** - Marsquake

Reference

1. https://www.thehindu.com/news/international/explained-what-is-the-gaia-space-mission-and-what-has-it-revealed-about-the-milky-way/article65527518.ece?homepage=true
2. https://www.cosmostat.org/research-topics/asteroseismology

Perfect Victim

- When survivors open up about sexual assault or domestic violence, one of their biggest fears is that they would not live up to the expectations of "perfect victimhood".
- It is a major reason why survivors do not come forward and seek legal help, and one of the biggest myths about sexual violence.
- To be the 'perfect victim' means **to show that the victim didn't ask for it**.
- When it comes to domestic or sexual violence no one is ever "asking for it", but patriarchal public and legal systems often hold victims responsible for assaults.
- Victims are expected to have a watertight case and at every step remain "faultless".
- Believers of perfect victimhood pick apart a victim's personality traits or behaviours that may even be unrelated to the assault in order to disparage the victim and ultimately question their credibility.

Reference

1. https://www.ndtv.com/world-news/johnny-depp-vs-amber-heard-amber-heard-says-she-still-love

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2. https://indianexpress.com/article/explained/explained-what-does-perfect-victim-mean-7977344/

