

## **Prelim Bits 16-09-2019**

### **Lovers of Modena**

- In 2009, two 1,600-year-old skeletons were unearthed at the ancient Ciro Menotti cemetery in Modena, Italy.
- Holding hands when buried, they sparked worldwide interest, and the assumption that they were a pair of lovers.
- They came to be known as 'Lovers of Modena' but the new analysis has now established that both were men.
- Various skeleton pairs in the past have been found holding hands in Greece, Turkey and Siberia but none of these so far have been established to be of the same sex.
- The new finding gives new insight about the funerary and burial practices in Late Antique Italy.
- The researchers hypothesise that the pair's burial represents a voluntary expression of commitment, rather than a recurring cult practice of the Late Antiquity.
- The injuries on some of the other skeletons found in the cemetery suggest that they could have been war casualties.
  - They could have been "comrades" or "friends".
- Alternatively, they could have been cousins or brothers who shared the same grave because of familial bonds.

### **Interstellar objects**

- In 2017, The Haleakala Observatory in Hawaii spotted a strange, spaceship-shaped object passing through the Solar System.
- It was named "**Oumuamua**", it became the subject of speculation whether it was really an alien spaceship.
- It was eventually declared by scientists to be an interstellar object, the first such known visitor to the Solar System.
- Now, it appears that a second interstellar object is paying a visit.
- On August, the MARGO observatory in Crimea spotted a comet and is believed to have originated from outside the Solar System,
  - although the official confirmation has not been made yet.

- The comet has been designated “**C/2019 Q4 (Borisov)**”.
- It is still inbound toward the Sun. It will remain farther from Earth than the orbit of Mars.
- It was detected by NASA’s Jet Propulsion Laboratory (**JPL**), Scout system.
- **JPL** automatically flagged the object as possibly being interstellar.
- The comet’s current velocity is about 150,000 kph, which is well above the typical velocities of objects orbiting the Sun.
- The high velocity indicates that the object likely originated from outside our Solar System and head back to interstellar space.

### **Strikes on Saudi oil facilities and its impact in Oil prices**

- The Houthi rebels from Yemen carried out drone attacks on two major oil facilities in Saudi Arabia.
- It includes the world’s biggest petroleum processing facility run by state-owned Saudi Aramco.
- This has impacted Saudi Arabia’s oil production and exports, and in turn the global oil market.
- The attack has cut output by 5.7 million barrels per day, this is close to half of the kingdom’s output and 5% of global oil supply.
- Saudi Arabia, the world’s top oil exporter, ships more than 7 million barrels of oil to global destinations every day.
- The output cut was expected to send oil prices up \$3-\$5 per barrel.
- Saudi Arabia is the second largest supplier of crude and cooking gas to India.
- A sudden increase in global prices will affect India’s oil import bill and its trade deficit.

### **Flying a drone in Delhi**

- Recently, 2 US citizens were detained for flying a drone fitted with a camera above the high-security zone in Lutyens’s Delhi.
- The drone was spotted above Rashtrapati Bhavan and its camera contain footage of Central Secretariat and nearby buildings.
- Flying of drones is banned over most parts of Delhi.
- A general guidelines issued by the, Directorate General of Civil Aviation (**DGCA**) also lay down specific no-go areas for drones.
- It made legal for ordinary enthusiasts to operate drones in India, subject to various requirements and clearances.
- **DGCA** has identified multiple categories of drones, which can be broadly classified as,

1. ‘Nano’ (weighing up to 250 g),
2. ‘Micro’ (more than 250 g but less than 2 kg) and

3. 'Small and above' (weighing 2 kg or more).

- Every drone that is bigger than a 'Nano' must obtain a unique identification number (**UIN**) from the aviation regulator.
- This number must be displayed on the remotely piloted aircraft.
- A **UIN** will be issued once, against a fee of Rs 1,000, and will not be issued to a foreign citizen or entity.
- Users of bigger drones will be required to obtain a Unique Air Operator's Permit (**UAOP**), similar to a driver's licence.
- The **UIN** and **UAOP** can be obtained from the online platform 'Digital Sky'.
- All drones other than those in the 'Nano' category must meet mandatory equipment requirements such as,

1. GPS,

2. Anti-collision light,

3. ID plate,

4. Radio-frequency identification (RFID) and

5. SIM facilities with software that ensures 'no-permission, no-takeoff', among other features.

- Before flying a 'Small' or bigger drone, an operator has to file a flight plan, and inform the local police.
- 'Micro' drones will be required to submit a flight plan only if using controlled airspace.
- Many drones used for amateur photography fall in this category.
- These aircraft will need a UIN but no UAOP, and will be allowed to climb only to a height of 200 ft.
- 'Nano' drones will be able to operate freely, without any registration or permit.

1. But their operations will be restricted to only 50 ft above the ground.

- All those requiring a **UAOP** must undertake a 5-day training that will expose them to regulations, basic principles of flight, air traffic control procedures, weather and meteorology.
- These operators will also have to take written tests and flight simulator tests before they are issued permits.
- All categories of drones must be flown in the visual line of sight, and only during daytime.
- The regulator listed 12 categories of "No-drone zones",

1. Area up to 5 km from the perimeters of the high-traffic airports of Mumbai, Delhi, Chennai, Kolkata, Bengaluru and Hyderabad.

2. For other airports, the no-drone zone extends up to 3 km.

3. Drones cannot fly closer than 25 km of international borders, including the Line of Control and Line of Actual Control.
4. Within a 5-km radius of New Delhi's Vijay Chowk.
5. Within 2 km from the perimeter of strategic locations and vital installations notified by the Ministry of Home Affairs.
6. Within 3 km radius of secretariat complexes in state capitals.
7. Within 3 km radius from a mobile platform such as a moving vehicle, ship or aircraft.

**Source: PIB, The Indian Express**

