Prelim Bits 02-03-2024 | UPSC Daily Current Affairs

Improvised Explosive Devices (IED)

The recent explosion in Bengaluru's Rameshwaram Cafe was prima facie caused by an improvised explosive device (IED).

- **IED** – It is basically a *home-made bomb* which may range from a *small pipe bomb to a sophisticated device* capable of causing massive damage and loss of life.
- Smaller bombs are easier to hide, carry, deploy and are also generally much less damaging than larger ones.
- **Deployment** – Using a vehicle, carried, placed, or thrown by a person, delivered in a package, or concealed on the roadside.

The term "IED" 1st entered common usage was during the United States' Iraq invasion (beginning in 2003), where such bombs were commonly used against US forces.

- **Components**
  - **An initiator** – A trigger to set the explosion off.
  - **A switch** – It arms the explosive.
  - **A main charge** – It causes the explosion.
  - **A power source** – Mostly, an electric initiator that require an electronic power source.
  - **A container** – An enclosure of all other components.

- **Enhancements** – *Nails, glass, or metal fragments* to increase the amount of shrapnel released and thus the damage it causes.
- It may also include hazardous *toxic chemicals, or radio-active* substances.

*The colloquial name of an IED packed with depleted Uranium is **dirty bomb**.*

- **Materials used** – It include *fertilisers such as ammonium nitrate and urea nitrate*, gunpowder, and hydrogen peroxide.
- **Damages** – The extent of damage depends on its size, construction and placement.

*Notable instances of **IEDs usage in India** include the 1993 Mumbai serial blasts, the 2008 Jaipur blasts, the 2006 Jama Masjid bombings, and the 2013*

Bodh Gaya bombings. It have also been commonly used by Maoist insurgents, and Kashmiri militants.

Reference

The Indian Express| IED blast in Bengaluru

MILAN 2024

The 12th edition of Milan exercise held recently in Visakhapatnam, the city of Destiny in 2024.

MILAN
• **Originated in** – *1995*, was originally conceived in line with India's *'Look East Policy'*. • **Host** – India • **Duration** – Biennial • **Type** – Multi-national naval exercise • **Founding Members** – India along with Indonesia, Singapore, Sri Lanka and Thailand. • **Aim** – To enhance cooperation and interoperability among the navies of diverse participating countries. • **Exercise** – It includes professional exercises, seminars, social events and sporting fixtures.

- **Aim** – To enhance professional interaction between friendly navies and gain experience in multilateral large force operations at sea.
- **Theme** – *'Camaraderie, Cohesion, and Collaboration'*.
- **The Harbour Phase** – It will have *Table Top Exercise*, Interactions of Young Officers, Outstation Cultural visits and *International City Parade*.
- **The Sea Phase** – Indian Navy ships, aircraft and submarines *led by Indigenous aircraft carrier INS Vikrant* and 20-25 Foreign Naval Units will participate.
- It includes advanced air defence operations, Anti-Submarine warfare, Anti Surface warfare operation and War at Sea.
- **Significance** – An opportunity to share operational insights in harbour, hone skills at sea, enhance camaraderie on the sports fields, and gain an exposure to Indian culture.
- **Strengthens Southeast Asian countries** – Security of vital sea lines of communication (SLOCs) in the Indian Ocean is important for energy and trade interests.
- It helps to *expand their naval engagements* beyond their traditional geographical neighbourhood.
    - Singapore, Indonesia, and Thailand since 1995, Malaysia in 1997, Myanmar in 2003, and Brunei, Cambodia, the Philippines, and Vietnam in 2012.

***Malacca Strait** links the Andaman Sea of the Eastern Indian Ocean to the South China Sea and serves as a transit for over 40% of global commodities.*

The Philippines and Indonesia are the largest and 3rd largest suppliers of

seafarers, respectively.

References

1. Times of India| Importance of Milan Exercise to South East Asia
2. In-Milan| MILAN 2024

Kulasekarapattinam Spaceport

The Rohini Sounding Rocket was launched from the mobile launch pad to mark the commencement of physical work on the Kulasekarapattinam spaceport.

- **Geographical location** – Thoothukudi district of Tamil Nadu.

Kulasekaranpattinam, better known for its Dussehra celebrations at Sri Mutharamman Temple.

- **Role** – It is ***ISRO's 2nd satellite launch facility***, would be completed within 2 years to launch SSLVs in order.
- It would have the capacity *to launch 24 satellites per year*.
- **Need** – The rockets launched from ISRO's Sriharikota facility in Andhra Pradesh *1st heads east, and then turn south* to avoid the Sri Lanka's airspace, costing more fuel and reduce payload's capacity.
- **Geographical advantages** – It can head straight in the southern direction *without a dogleg manoeuvre* and *closer to equator* than Sriharikota thereby reducing time and fuel wastage.

- **Economic significance**– It is relatively *closer to the ISRO Propulsion Research Complex* located in Mahendragiri, in Tirunelveli district, Tamil Nadu.
- It makes it easier to *transport the rocket components safely in shorter time,* thus reducing the costs involved.
- **Safety considerations** – *Proximity to the eastern coastline* of India are safer, as any failure of launches allow the debris to fall harmlessly in Bay of Bengal or Indian Ocean.
- **Promotes development** – A number of *allied industries* will come up in the neighbourhood that will create 1000s of jobs.

Quick Facts

- **Geo-stationary satellites** – They are usually communication satellites or satellites used for scientific research such as the International Space Station which are placed in the *orbit that are parallel to equator*.
- Launching these satellites from the sites *near the equator towards the east*

*direction will get an initial boos*t equal to the velocity of the Earth surface.

- **Polar satellites** – They are placed in *polar orbits moving across the equator in north south direction* and are generally launched in southward or northward direction.
- Therefore, they *cannot take advantage of the Earth's rotation*.
- **Small Satellite Launch Vehicles (SSLVs)** – They are designed to launch light-weight satellites less than 500 kg into the lower earth orbit at low costs.

Reference

The Hindu| Significance of Kulasekarapattinam Spaceport

Global Waste Management Outlook

The report 'Turning rubbish into a resource: Global Waste Management Outlook 2024' was launched during the 6th UN Environmental Assembly (UNEA-6) at the UNEP headquarters in Nairobi, Kenya.

- **Published by** – UN Environment Programme (UNEP) and the International Solid Waste Association (ISWA).
- **2024 report** – It provides an *update on global waste generation and the cost of waste and its management* since 2018 with main focus municipal solid waste.
- **Key findings** – Municipal solid waste generation is predicted to grow to *3.8 billion tonnes by 2050*.
- Municipal solid waste, an equivalent of 27% of the global total waste, is not being collected.
- More than *a third of the world's population is drowning in waste*.
- Over 2.7 billion people in the Global South and developing regions of the world not having their waste collected.

In the developed and upper middle-income regions of the world, almost all of the waste is collected between 83% for the Caribbean and 99% for North America.

- *By 2050, the global annual cost of waste management could almost double* than 2020 levels.
- Waste prevention and management measures could limit net annual costs by 2050 to USD 270.2 billion.

- **Recommendations** – Multinational development banks and donors can support proven *zero waste and circular economy initiatives*.
- National governments can legislate to deliver the *waste hierarchy*, incentivise zero waste business models, and *apply producer responsibility fees* to prioritise waste reduction.

- Emphasis on *'upstream' measures* at manufacturing stage, as opposed to 'downstream' measures which involved managing waste.
- Prioritize municipal solid waste management.
- **India** – The thriving street food sector across India *depends heavily on single-use plastics (SUP)*, which translate into a nationwide waste management burden and cost to society.
- *Adopting a reusable packaging system* would translate into being both economically viable and environmentally sustainable.

Waste contributes to the triple planetary crisis of pollution, climate crisis, and biodiversity loss.

References

1. Down To Earth| Release of Global Waste Management Outlook
2. UNEP| Global Waste Management Outlook 2024
3. Down to Earth| Waste issues in India

Bitcoin Halving

Crypto traders and Bitcoin miners are preparing for Bitcoin halving that is predicted to happen in April 2024.

Bitcoin (BTC)
• **Definition** - A form of *digital currency, created and held electronically* and aren't printed, like rupees or dollars. • It's the first example of a growing category of money known as cryptocurrency. • **Origin** – *Satoshi Nakamoto* proposed bitcoin, which was an electronic payment system based on mathematical proof. • **Created** – Digitally, by a community of people that anyone can join. • **Mined** – Using computing power in a distributed network.

Bitcoin (BTC) *can only ever be 21 million BTC in the world, over 19 million have already been "mined" or released.*

- **Reward for mining** – It is given *to the person who solves the puzzles 1st* which is currently set at 6.25 Bitcoin (BTC).
- While the reward is set, the true value of this prize fluctuates based on BTC prices in the market, and when the owner chooses to sell.
- **Bitcoin Halving** – It refers to the *50% reduction in the reward paid to Bitcoin miners* who successfully process other people's cryptocurrency transactions.
- **Occurrence** – It takes place after *2,10,000 blocks are mined,* and has happened so far in 2012, 2016, and 2020, every 4 years.
- **Need** – This saved reward will be *added to the public digital ledger* known as the

blockchain.

- **Significance** – Bitcoin mining increases the supply of BTC in circulation while the Bitcoin Halving *reduces the rate at which these coins are released, making the asset scarcer*.
- Scarcity is seen as pushing up prices, as is the case with gold.
- **Impact on investors** – It *depends on the investor in question, and the extent of their involvement* with Bitcoin and its ecosystem.
    - **For example,** a corporate-level miner will probably be desperate to earn their block reward in these last days.
    - A new trader who has invested a small sum of money might not even react to the news of the halving.
    - A more experienced trader might try increasing their Bitcoin investment hoping to profit from a possible price crash.
    - **Impact on crypto market** – *It varies* as every halving in Bitcoin's history has been wildly different.
    - It depends on varied factors like blockchain-related factors, diverse geopolitical events or economic shocks, among others.

Reference

The Hindu| Bit Halving

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