

1 Black Box (Source: The Hindu)

Black Box (also called Flight Recorder) is a small, rugged device installed in every aircraft that records flight data and cockpit audio to help investigators determine the cause of aircraft incidents or crashes.

Fact To Know

- It is painted in bright orange or yellow (not black) for easy identification at crash sites
- Invented by Australian scientist David Warren
- Usually fitted at the rear end of the aircraft
- After a crash, it works without electricity for 30 days, emitting a beeping signal for recovery
- Made of titanium alloy or stainless steel



2 Impact of Increased Peacock Population (Source: The Hindu)

Positive Impact

- A key example of wildlife protection efforts.
- Control pests by eating insects, larvae, and small bugs

Negative Impact

- Peacocks feed on grains, paddy, and vegetables, causing financial loss for farmers, which triggers human conflict where the farmers poison or kill peacocks to protect their fields
- More peacocks lead to increased road kills as they cross highways
- Peacocks prey on snakes, reptiles, and lizards – population increase reduces these species, and they eat larvae, bugs, and caterpillars, threatening endangered butterflies.
- Excessive populations may compete with other bird species for food and habitat.



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3 What are India's ballistic missile shield components? (Source: The Hindu)

India's Ballistic Missile Defence (BMD) programme

- *India's Ballistic Missile Defence (BMD) programme is an indigenously developed, multi-layered shield designed to protect critical assets from hostile ballistic missile attacks by DRDO in 2000*
- **Tier I: Exo-Atmospheric Interception:** This tier targets and neutralizes incoming hostile ballistic missiles outside the Earth's atmosphere.
 - **Prithvi Air Defence (PAD):** Also known as Pradyumna. It handles high-altitude interceptions at altitudes between 50 km to 80 km. It is a two-stage rocket (solid first stage, liquid second stage) capable of intercepting Mach 5-class ballistic projectiles.
- **Tier II: Endo-Atmospheric Interception:** This tier engages hostile threats within the Earth's atmosphere
 - **Advanced Air Defence (AAD):** Also known as Ashwin. It intercepts targets at lower altitudes of up to 30 km. It is a single-stage, solid-fueled interceptor that moves at hypersonic speeds (Mach 4.5) to neutralize short-to-medium-range threats.

