Black boxes

Prelims: Current events of National and International Importance

Why in News?

After the Air India plane (AI171) crash, the search for the flight's black box continues, which is crucial equipment to find out what happened moments before the disaster.

- A black box is simply a flight recorder from the early 1950s.
- Black boxes ***record data during flights*** without interruption and hold crucial information in plane crashes, such as fatal accidents.
- It was launched for commercial operations in 1952, but saw major accidents in its initial years.
- In modern aircraft, there is a Cockpit Voice Recorder (CVR) and a Digital Flight Data Recorder (DFDR).
- Generally, they are called black boxes even though they are painted with bright orange colour to ensure high visibility.
- In some aircraft, the two recorders are integrated.



- DFDRs are ***coated with bright orange colour***, treated with reflex material for high visibility, and securely connected with automatically activated signalisation for localisation underwater, .
- The CVR records radio transmissions and other sounds in the cockpit, such as conversations between the pilots and engine noises.
- The flight data recorder records more than 80 different types of information, such as altitude, airspeed, flight heading, vertical acceleration, pitch, roll, autopilot status, etc.
- The development of flight data recorders evolved over a period of time.
- It started with the use of metal foils for recording data, and later, they were replaced with magnetic tapes.
- At present, ***solid-state chips*** are used in the flight data recorders.

Reference

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