Belly Landing

Why in News?

Recently, 179 people were killed when Jeju Air flight 7C2216 made a belly-landing and overran the runway, smashed into the perimeter fence and burst into flames at the Muan International Airport in South Korea.

- **Belly-landing** – It is also referred as gear-up landing.
- It occurs when the aircraft lands without its landing gear fully extended and using its underside or its belly as landing site.
- **Conditions determining belly landings**
  - *Landing gear fails* to deploy.
  - A stricken aircraft cannot make it to an airport and landing is *done in a field*.
  - The pilot considers skidding the aircraft to a stop safer than touching down on wheels.
  - *Ditching*, when it makes an emergency landing on water.
  - Any other situation a pilot considers a belly-landing safer than landing on wheels.



- It also occur when pilots simply forgot to deploy the landing gear and landed aircraft on their belly.
- **Safety precautions during belly landings** - *Fire trucks and emergency services* must be ready to respond to a possible fire or evacuate passengers and crew after the aircraft comes to a stop.
- *Foaming the runway* with a chemical before belly-landings to suppress sparks and fire, which was in practice decades ago, is no longer required.

- **Damages to aircraft** – Even if the landing goes well, it results in considerable *damage to the plane, its engines and wings*.
- **Vulnerability of wings** – Wings are very close to the ground when an aircraft touches down and thus they must be held absolutely 'level' (parallel to the ground).
- With even a slight left or right bank either by the pilot or a strong gust of wind, a wing *could hit the ground, flip the jet, send it cartwheeling* or break it apart.
- The friction generated by the aircraft skidding on the runway can also *create sparks or result in a fire*.

Important terminologies

- **Landing long and fast** – It means an aircraft touches down far beyond the designated touchdown zone on the runway, leaving the crew with less runway length to stop the aircraft, and at a speed far exceeding the recommended landing speed.
- **Slats** – It is a *high-lift device* located on the leading edge of an aircraft's wing to increase the lift generated by the wing *at low speeds*, such as during take-off and landing.
- **Flaps** – It is located in the trailing edge of the wing that helps *to increases lift* by enhancing the wing's camber and surface area.
- **Stall** – It is a condition when an aircraft stops flying forward and starts dropping from the sky like a stone.

Reference

The Indian Express| Belly Landing of Aircraft

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