Ground static test of PSLV third stage

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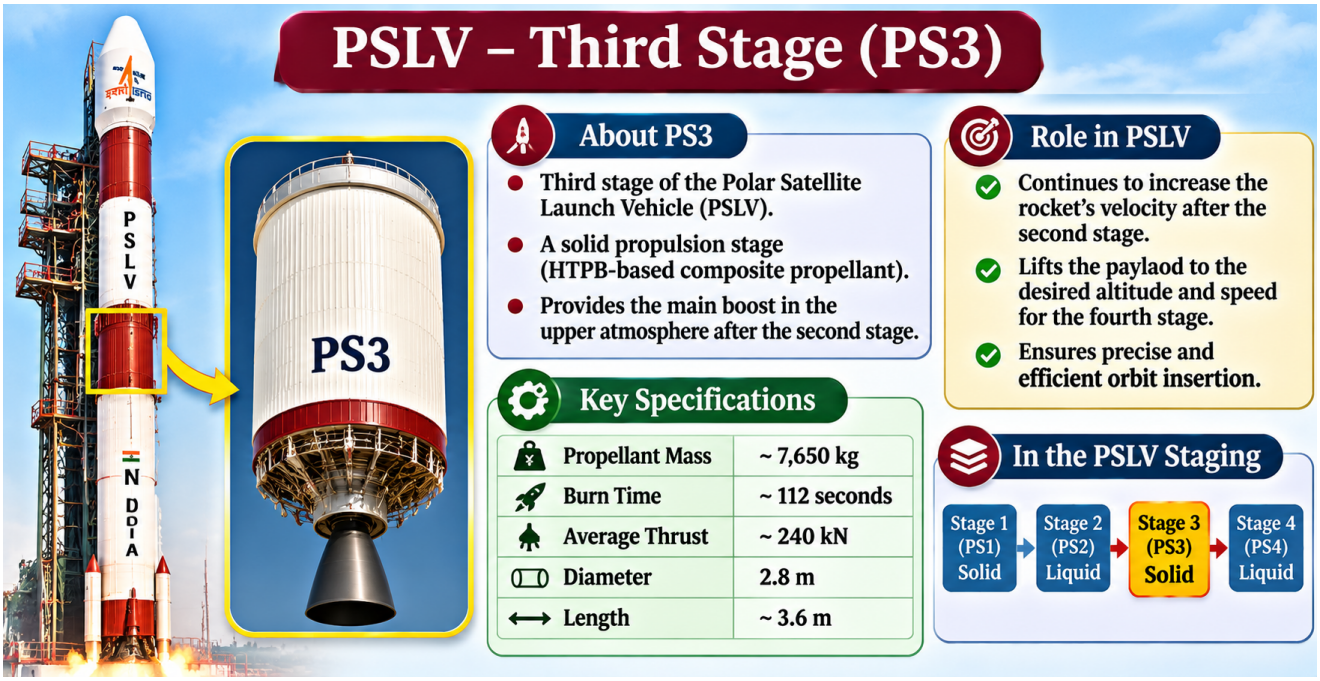
Why in News?

The Indian Space Research Organisation (ISRO) successfully conducted a ground static test of the Polar Satellite Launch Vehicle's (PSLV) third stage (PS3) at Sriharikota.

Key Highlights

- The test was carried out following comprehensive configuration revisions prompted by anomalies observed in the third stage during previous missions (PSLV-C61/EOS-09 and PSLV-C62/EOS-N1).
- ISRO thoroughly revisited the PS3 solid motor's configuration, focusing on design margins, raw material acceptance criteria, and assembly procedures.
- **Key Technical Upgrades**
  - **Nozzle & Interfaces -** Upgrades to the nozzle configuration to boost design margins.
  - **Sealing Redundancy -** Mechanical interfaces were strengthened with added redundancy in sealing systems.
  - **Quality Controls -** Updated non-destructive tests (NDT) and manufacturing procedures implemented throughout integration and transportation.
- **Next Steps -** ISRO will conduct detailed analysis and reviews of the test data collected from the static firing before clearing the vehicle variants for upcoming operational flights.

- **Anatomy of the PSLV (Four-Stage Architecture)**
  - **Stage 1 (PS1) -** Solid propellant motor (S139) with strap-on boosters.
  - **Stage 2 (PS2)-** Earth-storable liquid rocket engine (Vikas engine).
  - **Stage 3 (PS3)-** Solid propellant motor (the stage recently re-tested and modified).
  - **Stage 4 (PS4)-**Dual Earth-storable liquid engines.



Reference

[The Hindu | PSLV third stage]

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