Saras Mk2 Aircraft

Prelims – *General Science.*

Mains (GS III) – *Science and Technology Developments.*

Why in News?

The Saras Mk2, an updated version of an India-designed civilian aircraft, is set to test-fly in December 2027

- Saras Mk2 is a 19-passenger, ***versatile civilian aircraft,*** upgraded version of Saras MK 1.
- It is the first Indian multi-purpose civilian aircraft in the light transport aircraft category.
- **Aim** - It enhances regional ***air travel throughout India***, particularly targeting tier-2 and tier-3 towns that have limited airport facilities.
- **Developed by -** CSIR–National Aerospace Laboratories (CSIR–NAL) under the Ministry of Science and Technology.
- **Manufacturing assistance** - Hindustan Aeronautics Limited (HAL).
- **Objective -** To foster domestic civilian aircraft production, decrease reliance on imports, and support the UDAN (Ude Desh ka Aam Naagrik) initiative for improved regional air connectivity.
- **Speed –** Maximum cruise speed of 500kmph and stall speed of 180kmph.
- **Weight –** 7.5 tons.
- **Endurance –** 6 hours with a service ceiling of 29,000ft.
- **Key Features**
    - **Enhanced Model -** An upgraded version of the original 14-seater Saras, which first took to the skies in 2004, featuring redesigned aerodynamics and optimized engine placement.
    - **Versatile Applications** - Capable of functioning as a commuter aircraft, air ambulance, or for charter services in remote areas.
    - **Indigenous Components -** Avionics provided by Genesis, with brake and environmental systems developed internally by CSIR–NAL; composite wings are also produced in-house.
    - **Twin Prototype Strategy -** Two aircraft will be constructed to expedite certification processes and reduce developmental delays.
    - **Digital and Modular Architecture** - Features a CSIR-NAL-developed aircraft computer, allowing for future integration of automation and AI enhancements.
- **Significance**
    - **Enhance Regional Aviation** - Facilitates air connectivity to underserved areas, in line with the government's UDAN objectives.
    - **Revitalize Civil Aviation Research and Development** - Strengthens India’s

role as a technology innovator in the civilian aviation sector.
- **Decrease Foreign Dependency** - Provides a domestic alternative to imported aircraft such as the Dornier or ATR.
- **Offer Cost-effective Aviation Solutions** - Well-suited for short-haul routes, increasing passenger capacity in low-demand markets.
- **Foster Defence-Civil Collaboration** - The Indian Air Force has expressed interest in acquiring 15 units, promoting integration between civil and military production efforts.

Reference

The Hindu | Saras Mk2 plane

