



THE STUDY HISTORY

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Current Affairs

By Manikant Singh

Private Players in Space Tech and ISRO

The day 18th November 2022 has been remembered as historic day in INDIA'S space programme as India's maiden private rocket, '**Vikram S**', has been launched on this day. This rocket was developed by Hyderabad-based start-up **Skyroot Aerospace** and lifted off from ISRO's launch pad in Sriharikota. **Skyroot** has named this mission '**Parambh**'.



Details of Vikram-S

- Vikram-S is a **single-stage rocket** with solid propellant.
- '**Kalam-80**' is name of engine used in this rocket. It is named after former President Dr. APJ Abdul Kalam.



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- c. It also has **3D-printed engines** and **made of carbon fibre** that provided stability.
- d. This launch has been launched only for demonstration of technology which lifted upto 89.5 km (sub orbital). It carries 2.5 kg payload.
- e. It has been named after Dr. Vikram Sarabhai, founder of the Indian Space Programme. **In Vikram-S, 'S' stands for 'Series'**.
- f. It is especially designed for the launch of small satellites.
- g. NewSpace India Limited (NSIL) work closely with private companies and startups.

NewSpace India Limited (NSIL)

NewSpace India Limited (NSIL) is the commercial wing of ISRO. It deals with private players and start-ups to bolster space developments in the South Asian country.

Significance of small satellites

- Satellites are the **most important and reliable medium** to get special data, disseminate information and provide digital services at large scale in cost effective manner.
- **Universities and research institutions**, working on climate, weather, disaster, agriculture, forestry etc. are heavily depended on small satellites.
- Today apart from national governments, satellites are being used by the service providers etc. **Development of 5G technology** and other technology advancement like smart transportation, digital services for amusement, e-drones etc. also increase uses of satellite services. MNCs are launching its private satellites due to cut throat market completion for example recently small satellites have been lifted off for Tata Play and OneWeb.
- **Growing global market for small satellites** because small satellites can be assembled in just few days at a fraction of the cost of conventional satellites. But they are capable to provide all the services.

Role and Importance of Private players in Space Technology



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- As demand of small satellites are increasing exponentially but **ISRO is unable to provide its launching rockets**. For example, ISRO on average launches 5 satellites annually whereas US company 'SpaceX' launches more than 140 satellites annually. It is estimated that more than 20,000 small satellites will be launched in the next decade.
- **India's share in the global space economy is barely 3%**, but India want to capture 10% of global space economy in 2030. Apart from this, ISRO needs huge capital and man power to enhance its outreach.
- India **needs private players in innovation, manufacturing and launching** of small satellites.
- Rocket launchers for **small satellites are much cost effective** than PSLV and GSLV. So, more customers will come out on competitive launching prices
- India has **pool of young talent in the space technology** as well as aspiring start-ups like Skyroot, Agnikul Cosmos.
- Commercial launch creates **opportunities for space tech, academic research, service provider and new sector of employment**.

Role of ISRO for Private players

- Space tech start-ups **need an experienced mentor** as well as developed infrastructure because it is highly costly and risky sector.
- ISRO allowed private players in all sectors of space technology and activities. **Indian National Space Promotion and Authorisation Centre**, a unit under ISRO, has been instituted for the promotion of private sector in the space economy. NewSpace India Limited (NSIL) is an important entity to provide launching and other facilities to private sectors.
- ISRO will be like an umbrella organisation and association of Indian private companies with **ISRO leads positive wave in the global level**.
- As NASA created eco-system for private players, ISRO needs to be performed same role here. Without ISRO's assistance, private players will not dare to take such a big task.



Questions for Practice

Question. What is relevance of small satellite in the space sector? How can ISRO play an important role for the entry of private players in the space economy?

Question. In the reference of Vikram-S rocket, consider the following statements1. It is private launch vehicle for heavy satellites

2. It was launched by a private company, NewSpace India Ltd.

3. Vikram-S is a single-stage rocket with solid propellant.

Which of the following statements is/are correct?

- a) Only 2 and 3 b) Only 3
c) 1, 2 and 3 d) Only 2

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