



SpaceX Crew Dragon

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Why in News

- Recently, a spacecraft, **Crew Dragon**, built by **SpaceX** has successfully carried astronauts of **National Aeronautics and Space Administration (NASA)** at the **International Space Station**.
- **SpaceX** became the **first private company** to launch people (**human spaceflight**) into orbit, a feat achieved by the US, Russia & China.

Key Points

- **Crew Dragon:**
 - It is a part of the **Dragon 2**, a class of **reusable spacecraft** developed and manufactured by American aerospace manufacturer SpaceX.
 - It is the **fifth class** of US spacecraft to take human beings into orbit, after the **Mercury, Gemini, Apollo and Space Shuttle programs**.
 - The rocket, named **Falcon 9**, which carried the spaceship into the orbit, was also built by SpaceX.
 - It is done under the **Demo-2 Mission** of NASA and SpaceX.
- **Significance of Private Participation:**
 - The landing by SpaceX flight is a culmination of more than decade-long efforts to enable private players to build and operate what essentially is a commercial taxi-service to space, and allow **NASA to concentrate on deep space exploration**, and work more vigorously towards taking **humans to the moon, and Mars**.
 - The United States now plans to return to the Moon in 2024 under the **Artemis mission**, establishing a launching pad to Mars by 2030.

- **India and Private Space Companies:**

- While there are many private companies operating in the space sector in the United States, their contribution is not much significant in India.
- Most of them collaborate with the **Indian Space Research Organisation (ISRO)**, in building and fabricating the components that go into making rockets and satellites.
- However, launch services, **including the building of rockets or launch vehicles** are still a monopoly of government space agency, i.e. ISRO.

Importance of Private Participation in India

- **Space tourism** is one among several opportunities that Indian businesses may be keen to explore. A policy framework to enable private participation in this sector, of course, would have to be formulated by the government.
- **Small satellite revolution** is underway, globally, 17,000 small satellites are expected to be launched between 2020 and 2030. A strong private sector in space will help India to tap into this lucrative commercial space launch market.
- **Increasing space competitiveness:**
 - **Singapore** is offering itself as a hub for space entrepreneurship based on its legal environment, availability of skilled manpower and equatorial location.
 - **New Zealand** is positioning itself as a location for private rocket launches.
 - **China, too**, has changed its rules to allow private commercial space activity.
 - **ISRO** has been a genuine global pioneer of aerospace cost compression on several fronts. Cost-effectiveness has given the agency a distinct edge in the commercial arena of satellite launch services.

With such a valuable base of expertise within the country, it is only natural to expect the emergence of a private space industry that could prove globally competitive.

Way Forward

- The landing by the SpaceX flight underlines the fact that **space research and exploration is now a much more collaborative enterprise** than earlier.
- There is also a growing realisation that space agencies need to direct their energies and resources more towards **scientific research and deep space exploration**.
- It's been fifty years since the landing on the moon and efforts to take human beings to Mars and other celestial bodies, needs to be expedited.
- Getting back to the Moon would also require **huge amounts of financial resources** that most of the space agencies and **private players** are expected to **infuse fresh investments** and also **technological innovation** that will benefit everyone.

Source: IE