



## Kuaizhou-11 Rocket

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### Why in News

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The **Chinese rocket named Kuaizhou-11** failed due to malfunction during the flight, losing both the satellites it was carrying.

### Key Points

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- **Description:** Kuaizhou, meaning “**fast ship**” in **Chinese** is a low-cost **solid-fueled carrier rocket**.
  - It was **operated by the commercial launch firm Expace**, and was originally scheduled for 2018 after being developed three years earlier.
  - Also known as **KZ-11**, it had a lift-off mass of 70.8 tonnes, and was designed to launch **low-Earth and Sun-synchronous orbit satellites**.
- **Significance:** Although the launch failed, it signifies a **rapidly growing commercial space industry** in China.
  - Commercial launches are an emerging industry in China. Companies such as Expace, iSpace, and Landspace, created after the **Chinese government opened its space sector to private investment in 2014**, have cut down traditional launch operations and are developing rapid response capabilities, the report stated.
  - This has provided greater advantages for both government and commercial customers.
- **Other Important Missions of China:**
  - **Tianwen-1: China's Mars Mission** to be launched by July, 2020. China's previous ‘**Yinghuo-1**’ Mars mission, which was supported by Russia **failed in 2012**. Tianwen-1 will lift off on a Long March 5 rocket.
  - **Long March 5 Rocket:** Considered as China’s successful step to **operate a permanent space station** and send astronauts to the Moon.
  - **Tiangong:** China's own **space station to be built by 2022**. Tiangong means a '**Heavenly Palace**'.

## Space Commercialization and India

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- The development of **low-cost carrier rockets** must be seen in the backdrop of the fact that China gears up to compete with India to attract the lucrative global space launch market.
- According to an article published in 2017 in the Global Times, **‘China's space industry is lagging behind that of India in the commercial space industry.’**
- The Chinese rockets will have to create a niche for themselves in the satellite market where the Indian Space Research Organisation (ISRO) has already gained a foothold. ISRO's tried and trusted **Polar Satellite Launch Vehicle (PSLV)** has till now launched 297 foreign satellites and has various variants, which are meant for carrying different-size payloads and to different orbits.
- **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.
- However, apart from economic and efficient launch vehicles, India must also explore other domains, say, **space tourism** through private sector involvement.
- **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.
- **Increasing Space Competitiveness:**
  - **USA:** Recently, SpaceX became the **first private company to launch people (human spaceflight)** into orbit, a feat achieved by the US, Russia & China. The spacecraft **Crew Dragon** was used to successfully **carry astronauts of National Aeronautics and Space Administration (NASA)** at the International Space Station (ISS).
  - **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.
- **Steps Taken by India:**
  - Approval to the **Indian National Space Promotion and Authorization Centre (IN-SPACe)** to provide a level playing field for **private companies to use Indian space infrastructure.**
  - **New Space India Limited (NSIL)**, the newly created **second commercial arm** of the **Indian Space Research Organisation.**
  - 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

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With increasing competition, complexity and demand for space-related activities, there is a growing realization that **national legislation is needed** to ensure the overall growth of the space sector. A **New Space law** for India should aim at facilitating growing India's share of the global space economy in the coming decade.

**Source: IE**