



NASA's Boeing Starliner Spacecraft

Why in News

Recently, the launch of **Boeing's uncrewed Starliner Orbital Flight Test-2 (OFT-2)** has been postponed once again.

- The spacecraft, which is called the **Crew Space Transportation-100 (CST-100)**, is part of an uncrewed test flight to the [International Space Station \(ISS\)](#).
- The mission is part of **NASA's Commercial Crew Program**.

Key Points

▪ About CST-100:

- The spacecraft has been designed to accommodate **seven passengers or a mix of crew and cargo for missions to low-Earth orbit**.
- For **NASA service missions to the ISS**, it will carry up to four NASA-sponsored crew members and time-critical scientific research.
 - The Starliner is supposed to **carry more than 400 pounds of NASA cargo and crew supplies**.
- The Starliner has an innovative, weldless structure and is reusable up to 10 times with a six-month turnaround time.

▪ Purpose:

- When this test flight takes off, it **will check** the capabilities of the spacecraft from launch, docking, atmospheric re-entry and a landing at a desert in the US.
- The spaceflight will also **help NASA to ascertain and certify the transportation system** to carry astronauts to and from the space station in the future.

▪ NASA's Commercial Crew Program:

- Its main objective is to **make access to space easier in terms of its cost**, so that cargo and crew can be easily transported to and from the ISS, **enabling greater scientific research**.
- Through this program, NASA plans to **lower its costs** by sharing them with commercial partners such as **Boeing and SpaceX**.
- It is also planning to give the companies incentive to design and build the **Commercial Orbital Transportation Services (COTS)**.
 - COTS was a **NASA program**, announced in 2006 to **coordinate the delivery of crew and cargo** to the **International Space Station (ISS)** by private companies.
- By encouraging private companies such as Boeing and SpaceX to provide crew transportation services to and from low-Earth orbit, **NASA can focus on building spacecraft and rockets meant for deep space exploration missions**.
- [Crew-2 mission](#) is the second crew rotation of the [SpaceX Crew Dragon](#) and the first with international partners.

- Crew-2 astronauts joined the members of Expedition 65 (65th long duration expedition to the ISS).
- In **May 2020**, [NASA's SpaceX Demo-2](#) test flight lifted off for the ISS carrying two astronauts.
- The **aim of this test flight** was to see if **SpaceX capsules could be used on a regular basis** to ferry astronauts to and from the ISS.

International Space Station (ISS)

- It is a **habitable artificial satellite** - the single largest man-made structure in low earth orbit. Its first component was launched into orbit in 1998.
- It circles the **Earth in roughly 92 minutes** and completes 15.5 orbits per day.
- The ISS programme is a **joint project between five participating space agencies**: NASA (United States), Roscosmos (Russia), JAXA (Japan), ESA (Europe), and CSA (Canada) but its ownership and use has been established by intergovernmental treaties and agreements.
- It serves as a microgravity and space environment research laboratory in which crew members conduct experiments in biology, human biology, physics, astronomy, meteorology, and other fields.
- Continuous presence at ISS has resulted in the longest continuous human presence in low earth orbit.
- It is **expected to operate until 2030**.
- Recently, the **Russian Space Agency Roscosmos** launched its **biggest space laboratory named Nauka** to the International Space Station (ISS).

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