

Titans Space is Developing a Large Single-Stage-To-Orbit Spaceplane with Horizontal Takeoff and Landing Capabilities

The Titans spaceplanes are designed for high-frequency operations, with the capability to launch spacecraft, cargo, and passengers on a daily basis.

ORLANDO, FL, UNITED STATES, January 15, 2025 /EINPresswire.com/ -- After more than three years of planning and reviews, Titans Space Industries, Inc. (TSI) recently announced the design of its groundbreaking [Titans Spaceplane](#), a cutting-edge, single-stage-to-orbit (SSTO) vehicle inspired by the visionary

1970s Star-Raker concept by Rockwell International, the builders of the NASA Space Shuttle spaceplane (orbiter). Combining its single-stage-to-orbit (SSTO) and horizontal takeoff and landing (HTHL) capabilities with advanced modern engineering, this revolutionary spacecraft is

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Doug Kohl, Chief Operations Officer

poised to redefine accessibility and versatility in Low-Earth Orbit (LEO) operations. The Titans spaceplane will also serve a reusable first stage, launching spacecraft from its payload bay that are destined for destinations beyond LEO, such as the Moon.

While rockets have been the backbone of space exploration, facilitating satellite launches, space tourism, and cargo transport, their drawbacks—vertical launch and landing, high launch costs, limited payloads, inefficient reusability, and inherent unsafe nature—are significant. rockets are complex machines with numerous critical systems that must function flawlessly. The extreme

conditions of launch, ascent, and descent place immense stress on these systems, increasing the likelihood of malfunctions. TSI's revolutionary SSTO HTHL spaceplanes will overcome these limitations, positioning the company to dominate the aerospace industry.



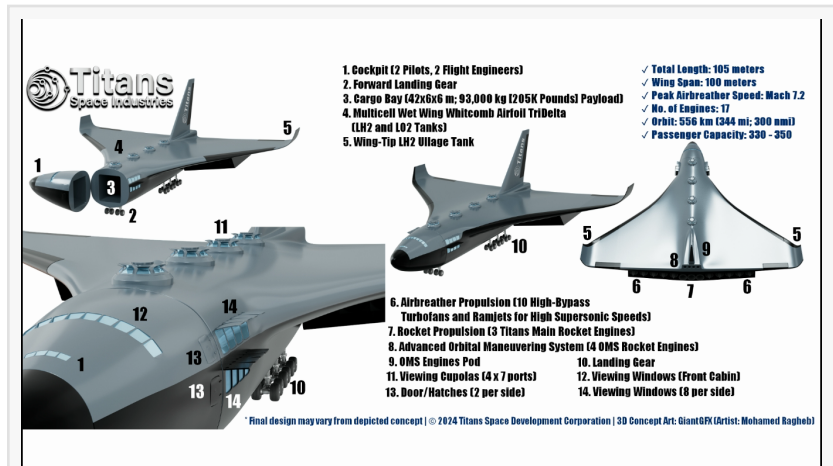
Titans Spaceplane

The Titans Spaceplane will serve as the backbone for TSI's ambitious orbital ventures, including the OrbitalLoop luxury tourism program, which offers a 3-day space station-like adventure, or the EarthLoop orbital cruise, which offers a 5-hour orbital flight with three hours of weightlessness. Equipped with state-of-the-art propulsion systems and aerodynamics, the spaceplane promises a seamless journey from runway to orbit and back, making space travel as safe and efficient as transcontinental flights.

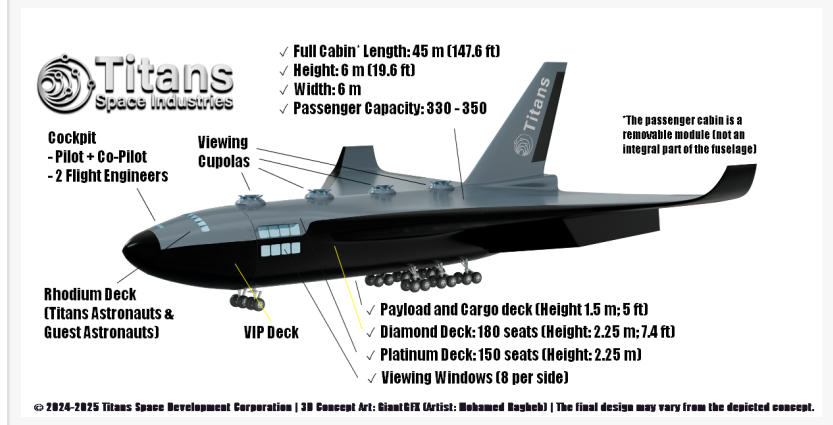
"The Titans Spaceplane represents the future of space operations—sustainable, efficient, and it can be used for a broad range of missions beyond just tourism, including space debris cleanup, disaster relief, and large-scale launches," said Doug Kohl, COO of Titans Space Industries.

"Our design builds upon decades of innovation while addressing the challenges of today's dynamic aerospace environment," said Franklin Ratliff, CTO of Titans Space Industries. "We benefit from Rockwell's Star-Raker concept and advances in terms of technologies, engineering, and materials."

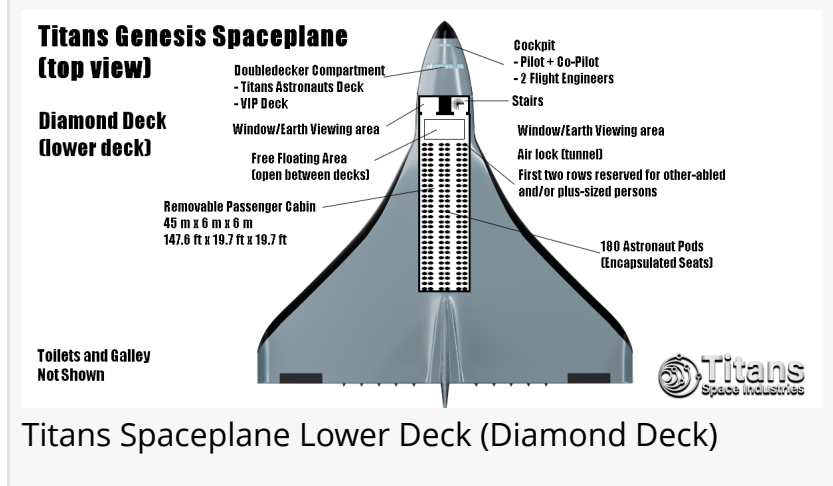
"This vehicle is not just a testament to engineering—it's a platform for humanity's expansion into space," said Neal S. Lachman, CEO of TSI. "By solving scalability challenges and ensuring economic viability, the Titans Spaceplane bridges the gap between Earth and orbit for commercial and humanitarian missions alike. Once operational, Titans spaceplanes -not vertically launched rockets- will dominate the LEO space industry and beyond due to their safe, efficient, and low-cost capabilities."



Titans Spaceplane Design Overview



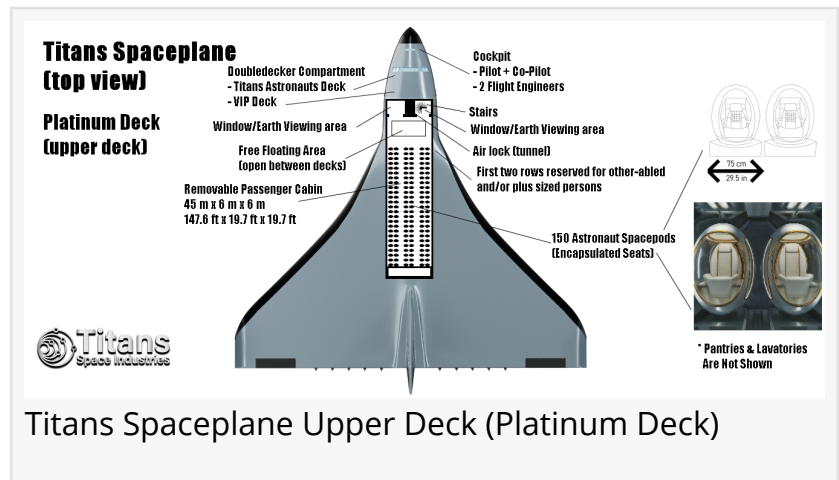
Titans Spaceplane Passenger Cabin Details



Titans Spaceplane Lower Deck (Diamond Deck)

Ultra-Wealthy Titans Astronauts as Founding Customers and Investors

After three years of relationship-building, TSI will welcome its initial 40 "Titans Astronauts" in 2025, each investing US\$25 million for a total of [US\\$1 billion](#). These pioneers are not only embarking on extraordinary space adventures but are also providing crucial investment that fuels the development of key infrastructure.



The factories and facilities to be established in 2025 will include:

- Titans Spaceplane Factory: A state-of-the-art manufacturing hub on 10-acres for the construction of the world's first fully operational SSTO HTHL spaceplane, the Titans Genesis Spaceplane. This flagship vehicle will serve as the prototype for the company's groundbreaking spaceplane program, setting the standard for single-stage-to-orbit (SSTO) operations.
- Titans Propulsion Factory: A 100,000-square-foot facility dedicated to developing and modifying jet and rocket engines for various Titans Space vehicles.
- Titans Works Innovation & R&D Center: A large-scale R&D hub focused on space industry innovation, including on-orbit services, advanced spacesuits, and space health and medicine. The center will house specialized testing facilities, including hypersonic and plasma wind tunnels and engine test sites.
- Titans Spacecraft Manufacturing Park: Dedicated to building Titans OrbitalPort Space Stations (LEO and Lunar), next-gen satellites, and Industrial Space Facility Units for on-orbit R&D and manufacturing.

"Our upcoming facilities and factories for the Titans Spaceplane and its components is a monumental step in shaping the future of space exploration," said Eric Kolte, Chief Development Officer of TSI. "These facilities will not only drive innovation in aerospace technology but also create a robust ecosystem of local talent and partnerships. By investing in state-of-the-art infrastructure, we're ensuring that Titans Space will be at the forefront of sustainable and scalable space transport."

Unmatched Capacity and Versatility

The Titans spaceplanes dwarf rockets in terms of capacity and scalability. For sub-orbital as well as orbital space tourism, a single spaceplane can carry up to 350 passengers. This capability opens the door to an entirely new market: large-volume space tourism, expected to generate billions in revenue annually for the company.

The payload capacity of Titans spaceplanes further cements their superiority. Rockets are unlikely to match the Titans spaceplanes' ultra-heavy lift capabilities, which exceed 100,000 kilograms. This level of performance allows TSI's vehicles to conduct frequent launches of satellites, deliver large cargo loads, and even deploy space stations in fewer missions.

Daily Launches, Unparalleled Efficiency

The Titans spaceplanes are designed for high-frequency operations, with the capability to launch spacecraft, cargo, and passengers on a daily basis. This stands in stark contrast to rockets, which often require weeks of preparation between launches. With their airplane-like reusability and rapid turnaround times, Titans spaceplanes redefine the economics of space access.

A single Titans Spaceplane can complete a launch, return, and be prepared for its next mission within 8-12 hours, thanks to its fully reusable design and minimal maintenance requirements.

Future-Ready Applications

TSI envisions the Titans Spaceplane as a vital tool for:

- Frequent Space Launches: Enabling high-frequency, cost-effective access to LEO and beyond, including tourism.
- Space Debris Mitigation: Clearing orbital debris to safeguard the space environment.
- Disaster Relief: Providing rapid response and aid delivery to remote locations.
- Defense Operations: Rapid global mobility and surveillance.

The Titans Spaceplane is also central to TSI's partnership with academia and industry, including its sponsorship of the Oklahoma University aerospace capstone project exploring specific characteristics.

Titans Spaceplanes have three separate engine systems:

- Airbreather Propulsion (10 engines) | Modified Off-the-Shelf jet engines
- Rocket Propulsion (3 main engines) | Titans Main Rocket Engines TMREs
- Orbital Maneuvering System (4 engines)

Some of the most important specs about the Titans Spaceplanes are:

- At 105 meters long, the Titans Spaceplane will be the largest winged vehicle to fly.
- At 330-350 person capacity, the Titans Spaceplane will be the largest space travel vehicle, capable of orbital and sub-orbital flights, starting at \$149,000 per person.
- The Titans Spaceplane is the 4th largest rocket-powered vehicle after the Starship, Saturn V, and N-1, and - It will be the 2nd-largest space transport vehicle in operation after SpaceX's Starship.

- At ~100 metric ton payload capacity, it will have the 2nd-largest payload vehicle in operation after Starship.
- With its ten turbofans, the Titans Spaceplane will have a dry thrust of ~750,000-850,000 lbs at takeoff.
- It will be the first airplane to use turbofan engines at speeds up to Mach 3 and use the first LOX/LH2 rocket engines developing over 1 million lbs thrust each.
- The intended thrust in pure rocket mode is 3 million pounds from three Titans' Main Rocket Engines.

For a comparison of the Titans Spaceplane vs Sierra Space's Dream Chaser and SpaceX's Starship, please visit the Library section of our website www.TitansSpace.com/Library-Analyses-White-Papers/

About Titans Space Industries

[Titans Space Industries Inc. \(TSI\)](#) is a pioneering space exploration and commerce company driven by a team with unparalleled experience. With a combined 600 years of expertise in business and aerospace, the founders of TSI have dedicated their careers to pushing the boundaries of what's possible. The team includes experts with backgrounds ranging from raising over \$6 billion in capital and leading complex M&A transactions at KPMG to overseeing 100+ Space Shuttle operations to developing 400+ spacecraft and pioneering satellite broadband. This deep bench of experience is now fully focused on realizing TSI's vision: making space accessible, sustainable, and impactful through the development of cutting-edge, reusable spaceplane technology for LEO access.

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