

10 Trends That Will Change the Course of the Aerospace Industry

Here are the top 10 trends which will change the future of space exploration, the airline industry, military defense programs, and more.

AUSTIN, TEXAS, UNITED STATES, May 6, 2021 /EINPresswire.com/ -- Today we look at the top trends driving the aerospace industry in 2021.

This is our latest article in a series of market intelligence investigations. Be sure to check out our previous articles on which industries will grow the fastest in 2021, as well as the top trends in supply chain and logistics, pharma and clinical healthcare, furniture manufacturing, and high-tech.



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1. A New Renaissance In Space Exploration Bridges The Political Divide

Space exploration is enjoying a new renaissance, with the US enjoying renewed pride in its recent accomplishments, such as the recent successful flight of NASA's Perseverance Mars Lander and the launch of five astronauts this past November aboard a SpaceX Crew Dragon spacecraft (powered by a SpaceX Falcon9 rocket) en route to the International Space Station.

These achievements mark a new era in the space program, as NASA breathes a sigh of relief that it is no longer wholly dependent on Russian rockets to send astronauts into space.

But this week, all eyes are focused on NASA's Perseverance Mars Lander and its Ingenuity Mars Helicopter, which will attempt the first-ever powered, controlled flight on another planet. The first takeoff test is expected very soon and will be broadcast on NASA television and on their

YouTube channel.

We can expect more significant developments from NASA in 2021, including:

Additional CST-100 Starliner Flight Tests

NASA's Commercial Crew Program has two companies competing against each other: SpaceX and the Boeing/United Launch Alliance partnership. While SpaceX has already had one successful flight ferrying astronauts to the International Space Station, Boeing/United Launch Alliance's CST-100 Starliner failed a critical flight test this past November. A retest in March has been delayed but expected later in 2021.

Double Asteroid Redirection Test (DART)

Can we protect ourselves from asteroids barreling toward Earth? NASA's Double Asteroid Redirection Test (DART) intends to find out by intentionally crashing into an asteroid to change its orbital path. Expect the mission to launch later this summer, with the asteroid crash test taking place late in 2022.

James Webb Telescope

The Hubble space telescope, famous for needing to be fitted with corrective "glasses" after a math miscalculation in its optical lens system, will be joined by the new James Webb Space Telescope. The new telescope is expected to be launched in the fall of 2021 and will stake out a position orbiting the sun for a clear view of the cosmos.



NASA's Ingenuity Mars Helicopter spreads its wings before attempting its first-ever flight.

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Formaspace manufactured the 60" x 24" x 64" stainless steel mobile cart shown above for use in such an environment at a space program facility in Florida.

Orion And Space Launch System Tests For The Artemis 1 Moon Mission

As part of NASA's plan to return astronauts to the moon, dubbed Artemis 1, it will launch an unmanned test flight of the new Orion spacecraft and Space Launch System (SLS) rocket this fall. A successful test could pave the way for the launch of the Artemis one crew in 2023.

Space exploration remains popular among the American public. According to a new poll from Morning Consult, nearly 50% of Americans believe it's essential that the United States continue to be a world leader in space exploration. When asked about specific programs, most respondents believe the top priorities for the space program should include:

1. Monitoring the Earth's climate system
2. Monitoring asteroids that could strike Earth
3. Developing tech not just for space exploration

Congress seems to have gotten the message.

Space exploration is actually one of the few political funding areas that competing political parties in Washington can agree upon, with both Democrats and Republicans supporting continued funding for NASA's space exploration initiatives.

Nonetheless, NASA will need more money than the \$24.7 billion that the Biden administration has proposed in its fiscal 2022 budget to fully fund a manned mission to Mars.

2. Life In Outer Space Is Closer Than You Think

Thanks to recent advances in space technology, the idea of living in space or traveling to Mars no longer seems like a far-fetched idea taken from science fiction books.

Much of the credit for this goes to Elon Musk, who has worked tirelessly in his quest for humans to land on Mars.

Last December, Musk's company SpaceX performed the first major test of its SN8 prototype for its Next-generation "Starship" spacecraft / rocket system, which is the scaled-up successor to the successful Falcon9 program designed to take humans to Mars and back.

This private enterprise approach (albeit funded with lucrative government space launch contracts) is quite different from the government-run "space race" of the 1950s and 1960s and marks a major new trend.

And Musk is not the only civilian promoting space travel. He's part of an elite "billionaires boys club" that are leveraging their fortunes to explore space, including Amazon's Jeff Bezos (with his

Blue Origin rocket company), the late Microsoft co-founder Paul Allen, and Virgin Galactic founder Richard Branson (with his stunning new SpaceShip III vehicles).

What If Space Travel Becomes A Common Occurrence In The Coming Decade?

Even if space travel is widely available, the challenges ahead for our physical bodies are still daunting.

Recent studies of long-term visitors to the International Space Station quantify just how unprepared the human body is for life in space – with loss of bone mass, heart muscle shrinkage, and sustained radiation damage just a few of the most worrisome challenges.

And those looking to escape environmental problems here on Earth may well be disappointed that humans have already created what can best be described as a massive “garbage belt “ of space debris surrounding the Earth, which imperils the life of every astronaut passing through it. (This month, the Japanese company, Astroscale, launched its ELSA-d (short for End-of-Life Services) mission which will test new technology for “hoovering up” that prodigious amounts of junk in near-Earth orbit.

As we actively work toward colonizing the moon and Mars, we will also have to address another important scientific and philosophical question:

Are we the first life forms to get there?

Or are we following in the footsteps of life forms that preceded us?

This Question About The Existence Of Life In Outer Space Has Taken On New Significance Recently.

As NASA scientists prepare to look for signs of life on Mars, they have also been surprised to discover unexpected life forms (such as mold formations) within the confines of the International Space Station.

Meanwhile, discussions about alien life that were once relegated to the covers of sensational tabloids found at grocery store checkout counters are now appearing in more serious academic journals. For example, noted Harvard University astronomy Professor Avi Loeb recently wrote a book, *Extraterrestrial: The First Sign of Intelligent Life Beyond Earth*, about the peculiar cigar-shaped Oumuamua asteroid that passed between the Earth and the sun in 2017. Loeb believes it could have been a spacecraft pushed by the momentum of light particles built by a technologically advanced alien civilization.

Conspiracy theorists can rejoice, as this also comes at a time when the US Navy and other federal agencies tasked with collecting reports about UFOs have begun to release additional

information, which may result in providing the public more questions than answers.

What should we do about this? According to Michio Kaku, a leading physics researcher in the field of string theory, the answer is simple: keep quiet. Here is Kaku's statement as reported in the Guardian:

Soon we'll have the Webb telescope up in orbit and we'll have thousands of planets to look at, and that's why I think the chances are quite high that we may make contact with an alien civilisation. There are some colleagues of mine that believe we should reach out to them. I think that's a terrible idea. We all know what happened to Montezuma when he met Cortés in Mexico so many hundreds of years ago. Now, personally, I think that aliens out there would be friendly but we can't gamble on it. So I think we will make contact but we should do it very carefully.

3. Airlines Fight For Financial Survival During The Coronavirus Pandemic

The trillion-dollar question facing [the airline industry](#) is how to make money again in 2021 – and keep one step ahead of bankruptcy.

During the height of the coronavirus pandemic, airline traffic fell by more than 90%.

Much like restaurants that suddenly switched to take-out service during the Covid lockdown, passenger airlines quickly took on as much cargo business as possible to keep flying during the height of the pandemic.

Fortunately, the US government stepped in several times to provide significant financial assistance to help the domestic air carriers stay afloat and retain their employees. European countries and other nations around the world have done the same.

Thanks to the success of the coronavirus vaccination programs here in the US, the domestic airline industry can now shift toward planning for the future.

One of the first priorities is gaining the trust of the traveling public and convincing them that it is safe to fly once again.

While there is a lot of pent-up demand for leisure travel, it's not clear if the all-important, highly profitable business class flyers will return to the skies in numbers anywhere close to pre-pandemic levels.

With this in mind, airlines will have to restructure their operations, perhaps taking on more cargo business than before or reducing their flight routes and service frequencies to align with lower revenue models. Airline companies may also lean on other business models, such as beefing up their airline travel points businesses.

How Quickly Will Airlines Recover?

A lot depends upon how quickly the public gets vaccinated. The CDC says it safe for vaccinated people to fly, although they should continue to wear masks in flight.

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