

Trajectory of a suborbital flight.



Stacey Tearne standing in front of Soyuz.

Space experiences

Over the next decade Space Adventures will fly more people to space than have made the journey since the dawn of the Space Age. Helen Jameson talks to Stacey Tearne, Vice President of Communications, Space Adventures, about what the company is trying to achieve.

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Over the next decade Space Adventures will fly more people to space than have made the journey since the dawn of the Space Age. Our clients will fly on suborbital flights, on voyages to Earth orbit and on historic expeditions that circumnavigate the moon. Flights will leave from spaceports both on Earth and in space, visiting private space stations, and aboard dozens of different vehicles. By continually providing newly available space experiences and improving existing space experiences, Space Adventures will continue to lead the private spaceflight industry that it began in 2001 with the flight of the world's first space tourist.

Question: Many thanks for speaking to me today. Would you kindly introduce yourself and Space Adventures to our Readers?

Stacey Tearne: I am the Vice President of Communications at Space Adventures. Space Adventures is the first and only company to have sent paying passengers to Space. We did this initially in 2001 with the launching of Dennis Tito, a California businessman. Since then, four other individuals have flown from Mark Shuttleworth from South Africa, Greg Olsen from New Jersey, Anousheh Ansari from Texas and most recently, Charles Simonyi from Seattle.

Question: Space Adventures' mission is that you wish "to open space-flight and the space frontier to private citizens". How realistic do you feel this aim is and how popular do you see space tourism becoming over the next twenty years?

Stacey Tearne: Well we envision thousands of people able to take flights annually within the next ten years and offering the orbital

flights is one step in opening up what we say in our mission statement - opening up the final frontier which is space. So we're doing that through our orbital programme and we've announced a lunar programme that has the ability for one or two people to circumnavigate the moon also with the Russian Soyuz rocket.

Question: Do you ever envisage a time when you will be able to take tourists to the moon itself?

Stacey Tearne: Well, this one would circumnavigate so basically we'd just be going to the far side of the moon and there wouldn't be a landing but the eventual evolution of these missions means that over time there will be lunar landings. Through the orbital missions and through the lunar mission and the sub-orbital programme which is only a few minutes in space, over time the demand for these will increase and then we'll be able to, with the money invested from the earlier flights, we'll be able to provide the vehicles at perhaps a lower cost of manufacturing and that will provide the



opportunity for more people to take flights.

Question: A trip into space is obviously completely different to taking a trip on a plane. What level of fitness does a potential space tourist require and what kind of training would they have to go through?

Stacey Tearne: Well, I said, we have a few different programmes. For any of our flights you just need to be in good physical health and to have medical checks before the different programmes.

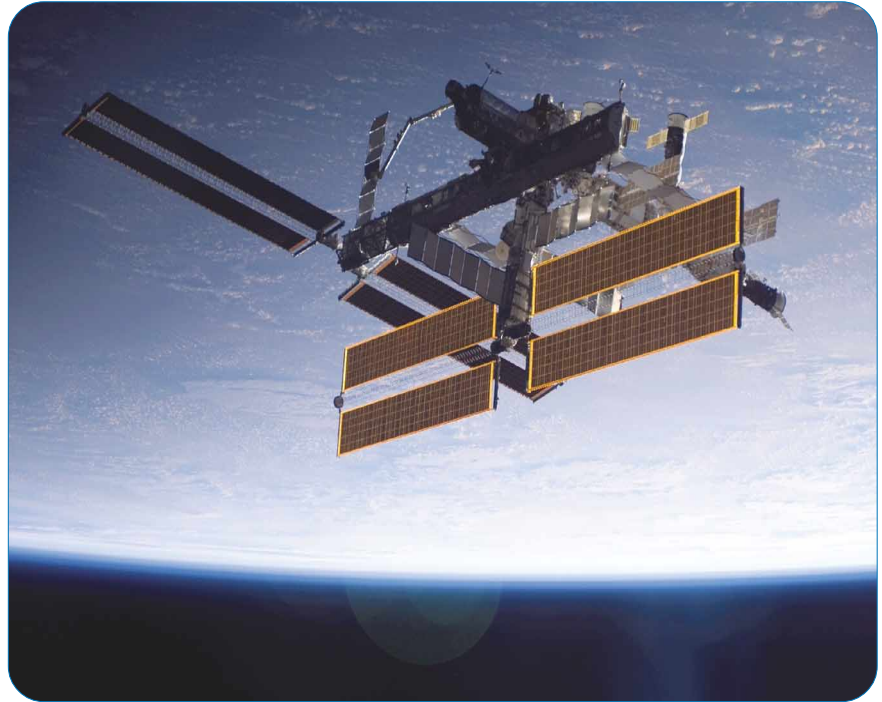
For the sub-orbital, there's about four days training and it's not so much physical training but it's just sort of understanding the vehicle, the systems, what's going to be happening, sort of going through a series of scenarios, for them just a general understanding.

For orbital flight, which is usually about ten days in space, there is six months of training. It's much more detailed and basically again, that is becoming familiar with the systems and the operation of the Soyuz rocket that transports them to the International Space Station. There's a lot of training for them to understand what is aboard the International Space Station, where they will be spending their time and what's involved with that and there's a lot of physical training. You have to be physically prepared to spend a short duration of time in space. There's physical training such as cardio-vascular, swimming, but there's also other training to make sure that the people are capable of withstanding that time in space.

In the centrifuge, the centrifuge simulates gravitational forces so you can simulate what a launch would be like and the G-forces that would be felt on a Soyuz launch, the G-forces that are felt when you're coming back to earth for re-entry into the earth's atmosphere.

There's a vestibular chair that is basically where you are moving in a circular motion and it's calibrating your inner ear and your equilibrium because when you're in space you experience weightlessness and your inner ear may become unaware of what's going on. So you're basically just conditioning your system to understand that it's okay and also there's weightlessness training on the zero gravity flights. During the flight there's several parabolas – parabolas are arcs. During a parabola on the descent you have a simulation of weightlessness so you're actually in zero gravity and so there, our clients would train to be able to operate in that environment. They practice putting their suits on, they practice moving around and flying so they just become more acquainted with that kind of environment so that's about six months. For our lunar programme, it's probably about six months also of training.

Question: What is involved in a sub-orbital



International Space Station. Photo courtesy of Space Adventures.

space flight?

Stacey Tearne: Suborbital spaceflights reach an altitude of at least 62 miles which is outside the earth's atmosphere. During a suborbital flight, rocket motors boost passengers 100km above the earth's surface. As the vehicle reaches maximum altitude the rocket engines shut down and participants experience at least five minutes of weightlessness, all while gazing at the vast blackness of space and the blue horizon of the earth.

Question: Do you have many clients in training at the moment?

Stacey Tearne: The frequency of the available flights really steers when our clients start training. So the next seat that's available is the Fall of '08. So we don't have anyone in training now. In the next few weeks we will be announcing the identity of that person who will be taking the seat in the Fall '08 flight. So if you back out from say six months from September '08 that person will not start training until spring of next year. So it's the frequency of the flights that dictate when the people start training. We have about a dozen people who are in different stages of either showing interest, signing a contract or getting ready to train so we have seat available for 2008, we have seats available in 2009 also.

Question: Where do you see Space Adventures in ten years time?

Stacey Tearne: We hope to be providing more opportunities for the orbital flight. Right now the Soyuz only launches twice a year from the Baikonur Cosmodrome in

Kazakhstan. So, we envision in ten years that the frequency of those launches will increase. So we will be able to provide the opportunity of space flight to more people on the orbital front. We are moving towards a lunar landing mission so the people who have already circum navigated the moon and we're trying for a landing mission and we're also hopeful that our suborbital programme is in working order in that thousands of people each year will be taking advantage of that. So, four different programmes, sub-orbital being 100 km above the earth's surface, in our orbital mission in which you go to the International Space Station and that's 250 miles above the earth's surface, to the moon which is 250,000 miles away and it's through those different programmes that thousands of people are taking advantage of space flight which then will allow commercial equities and companies to do research and who knows what resources and advancements will come from that.

Question: What technological advancements do you see occurring within space tourism over the next few years to make your vision a real and true concept for us all in future years?

Stacey Tearne: There have to be vehicles that are safe and reliable and that from a manufacturing perspective are cost effective to build. That is going to be the teetering point of really opening up for more people to take advantage of us. If we don't have the vehicles that are safe and reliable and if we don't have cost-effective vehicles then none of this will be realised. ●