

Incredible Adventures: Plans & Aims

Preparing for Space – The Next Incredible Adventure

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The Accidental Birth of a Space Tourism Company

In 1993, Kent Ertugrul, an American entrepreneur, was in Moscow, looking for computer programmers to work for his Florida-based voice mail company. While there, he happened to meet the neighbor of a Russian test pilot, who offered to arrange a flight for him in a MiG-29. Kent loved his adventure in a MiG so much that he obtained the rights to market the flights worldwide and returned home to Sarasota to found MIGS etc. An accidental meeting and an ad in the Wall Street Journal was all it took to launch the “fighter jet tourism” industry. Customers began lining up to place deposits on MiG flights, much like customers are lining up today to place deposits on suborbital flights.

Word spread quickly that Americans and others were paying significant sums of money for jet fighter flights. Representatives of the Russian Space Agency contacted company officials and asked if they'd be interested in selling space training. It was an offer too good to refuse. The company's first zero-gravity flight took place in February 1994, planting the seeds of a new space tourism industry. The historic flight was covered by CNN, CBS and major newspapers around the globe. In 1996, under new ownership and the new name Incredible Adventures, the company worked to get one of its customers on board a Soyuz flight to the Mir Space Station. A deposit was paid to the Russian Space Agency, but the individual failed to secure the funds needed to complete his journey, missing his opportunity to become the first space tourist.

Over a decade later, Incredible Adventures continues to offer MiG flights over Moscow and cosmonaut training at Star City. The company has seen interest in its space-related offerings grow with each passing year. In 1993, no one wanted to fly the MiG-25 and today, the jet known for its ability to fly 80,000 feet high to the

edge of space, where the sky appears black above and blue below, is its most popular product. Now, in addition to Russian space adventures, Incredible Adventures markets zero-gravity adventures in Florida on behalf of Zero G Corp and suborbital flights on behalf of Oklahoma-based Rocketplane, Ltd.

Incredible Adventures has diversified to become one of the world's leading adventure companies. Products include great white shark dives, US air combat adventures and military fantasy camps. The lessons learned through years of introducing and delivering high-end adventures makes the company uniquely suited to help develop and market a new generation of space adventures. The newest adventure under development by Incredible Adventures is a civilian space flight training program. The company's plans and aims for the future will make use of lessons learned in the past.

Lesson One: You Must Speak a Common Language

The average individual who schedules a Russian MiG-25 flight to the edge of space in Russia is not a rocket scientist. He's not even a pilot. He's a 41-year-old male who makes his living as a lawyer, doctor or computer professional. He doesn't care much about the brand of engines in the jet or whether the jet has one engine or two. He just wants to know the important stuff: how high, how much, how fast, how long, will he get a video and how soon can he go.

It is difficult to sell a new product to someone who doesn't speak your language. To successfully market civilian space flights and/or space training, one must find a way to translate the technical side of aeronautics and astronautics in such a way to be understood by the masses. When the Russian MiG-25 was advertised simply as a high-altitude interceptor, the demand for flights was nominal. Once the

MiG-25 became “the jet that can take you to the edge of space”, the jet became a top-seller. Selling vestibular training at the Y.A. Gagarin Astronaut Training Center will remain a challenge until the general population associates vestibular training with the image of an amusement ride designed to test one’s tolerance to spinning in various directions.

Lesson Two: Thrillseekers Come in All Sizes

Thrillseekers are routinely denied the chance to fly a Russian MiG-25 or train in the hydrolab at Star City, simply because they’re too tall, or too round. When Russian engineers designed their jet fighter cockpits and Orlan space suits, they didn’t anticipate they’d one day be selling training to tall or supersized Americans. Historically, spacesuits, jet cockpits and safety parachutes have been designed for men who fit very specific height and weight restrictions. To truly open space training and activities to civilians (tourists), designers must do everything possible to accommodate everything from a 4’11”, 90 lb female to a 6’4”, 350 lb male.

Lesson Three: Location Doesn’t Matter

If a survey was completed, asking individuals to name locations where they’d like to go to fly a fighter jet, chances are good Moscow, Russia and Cape Town, South Africa wouldn’t even make the list. And yet, many have traveled to both locations to fly fighters with Incredible Adventures. If someone really wants to fly a jet or dive with sharks or travel to space, he or she will go wherever it is necessary to make the dream come true. It won’t matter if the spaceport is in Florida, New Mexico, Oklahoma or Wisconsin. Location only becomes an issue in two situations:

If two nearly identical products, sold at nearly identical prices, are offered in two different locations, the individual will choose the location closest to home, the one offering the greatest conveniences or in the location perceived to be the best vacation destination. All other factors being equal, they may even pay a higher price for the sake of convenience. New suborbital companies can overcome any location drawbacks by insuring their product is unique and seen as far superior to that of its competitors.

The other situation where location can be important is if governmental, political or economic issues make a location undesirable or less desirable. For example, a recent Incredible Adventures client from Lebanon has acknowledged getting a tourist visa for the United States will be difficult but a visa to enter South Africa not so difficult. As another example, Cuba may offer a great location to sell MiG flights, unless you’re an American company hoping for American customers.

Lesson Four: Keep Medical, Physical & Educational Requirements Minimal

While health and personal safety must always be a priority, designers of new space tourism products must be aware of the implications stringent health requirements can have on sales volume. It may be very easy to obtain an EKG from one’s doctor in the United States to insure good heart health prior to a sub-orbital flight, but for a client residing in a country with socialized medicine, obtaining such a test can take weeks or months. The health requirements for a civilian hoping to be accepted aboard a Russian Soyuz flight to space are currently such that few will successfully meet the guidelines. Developers must make sure that any regulations established are absolutely necessary and not simply a matter of following precedent and requiring something “because that’s always been required”. If health checks are deemed necessary, a space adventure provider should strive to provide easy access to a health care professional.

Keeping educational or knowledge requirements to a minimum is also advisable. Doing so increases the pool of potential customers. The majority of those purchasing a flying adventure from Incredible Adventures are not pilots. The majority of those purchasing shark dives are not divers. The majority of those jumping from airplanes at 30,000 feet are not skydivers. Any specialized knowledge that is necessary for safety reasons is provided just prior to an adventure.

Lesson Five: Customers Don’t Like Surprises

The higher the price paid for an item or an adventure, the higher the expectations. Even thrillseekers with a love for living on the edge want everything about their adventures to go as

planned, and if not, to know there is a “plan B”. If a customer travels to Moscow and finds the jet he is scheduled to fly has a mechanical issue, or weather makes flying unsafe, it’s not good, but it’s OK. That’s because Incredible Adventures has always gone to great lengths to expect the unexpected. Back-up days and refund policies are a standard part of any adventure package. Customers are told what to expect in advance so there are no surprises.

Likewise, customers purchasing suborbital flights or any other space-related adventure must be given the most accurate and detailed information possible. They must understand that there can and will be mechanical delays and weather delays and other delays that are inherent in any adventure activity. They can’t be told they’ll be able to float free through the plane’s cabin, only to arrive and be told they must remain strapped in their seats at all times. Trust is a critical factor. Customers must be able to trust you to deliver everything you promise and more or to do everything in your power to make things right.

Lesson Six: The Importance of Price and Safety are Overrated

Price is important, but it isn’t the only determining factor for a civilian choosing an air or space experience. The cost of a MiG-25 flight to the edge of space is nearly twice that of another supersonic jet, yet it remains the most popular choice. Individuals will pay a premium if they are confident they will receive superior value for the money. Offering a variety of experiences at different price points will provide the greatest potential for sales, but when someone is purchasing a dream, the cost is not as critical to the decision-making process as it would be when purchasing a television.

One should note that a high retail price can both hurt demand and help demand. Much depends on the way a product is positioned in the marketplace. If the goal is to position suborbital space flight as a luxury available only to the world’s elite, much like buying a flight on the Concorde or a membership in a prestigious country club, then the retail price can be high. If the goal is to fly as many people to astronaut altitude as possible, resources must be devoted to keeping operational costs and the retail price minimal.

It is often said that civilians will travel to space in large numbers only when it is proven to be safe. Developers and operators of adventures should accept that what they are selling and delivering will never, ever be safe. It will only be “as safe as it can be”. Flying a fighter jet is inherently risky and one could die. The same could be said for racing a car or diving with sharks or simply walking across the street to buy a cup of coffee. Someone skydives knowing his chute could fail. He races a car knowing he could crash. A certain degree of risk is acceptable and part of the thrill adventurers seek.

Lesson Seven: Time is Precious

The average thrillseeker wants to complete a dream adventure in as little time as possible. One of the greatest obstacles to selling orbital space travel is not the \$20 million price tag, but rather the expected six months required to train for such a mission. Incredible Adventures has found the most popular program in Russia to be a four day / three night adventure. Given a choice, many customers would select an even shorter program, but Incredible Adventures strongly discourages scheduling a program without including a back-up day to be used in the event of bad weather or unexpected flight delays. Designers and developers of space flight programs should keep this in mind when planning their adventure itineraries. There will be a need for preflight training, but it should be kept to a minimum and scheduled to provide the maximum amount of flexibility for the customer.

Adventures and fantasy camps succeed by providing participants with a shortcut to a dream. One can spend a great deal of time and money learning to fly a jet fighter or one can travel to Moscow and be flying one within a day. One can join the military to learn urban warfare tactics and experience the adrenaline rush of combat, or one can enroll in an Urban Ops fantasy camp, experience the thrill immediately and avoid real bullets.

Lesson Eight: Know Your Customers

The average customer for an Incredible Adventures jet fighter adventure has been a 41 year old male and approximately 90% of the individuals traveling to Russia to fly MiGs over Moscow have been male. Historically, the company’s space adventure clients have been older and more likely to be female. It’s important

you don't design a space flight training program that can only be completed by a very athletic 20 year old if your most likely customer is a non-athletic 55 year-old.

Lesson Nine: There are Thrillseekers and Adventurers All Over the World

Roughly 30% of those purchasing programs from Incredible Adventures live outside the United States. Since 1/3 of the space tourists traveling to the International Space Station have also lived outside the US, it's safe to assume the market for new space adventures will be a world one. It should be noted that Incredible Adventures regularly advertises in international publications and devotes a high percentage of its internet marketing budget to international search engines in order to capture the world market and not just the US market. Marketing internationally has helped Incredible Adventures to survive economic downturns. When the US economy was struggling and sales to Americans were down, sales to Europeans were up, providing a balance.

Those designing suborbital planes or space training programs should be conscious of the fact a high percentage of their passengers or customers may not have English as their primary language. Safety systems must be easily translated or explained and marketing materials should strive to be clear and understandable. If a doctor's exam is an adventure requirement, accommodations must be made for those who have difficulty getting the necessary medical appointment in their home countries. Those who actually sell the adventures should try to warn customers of any potential travel issues. For example, American customers purchasing fighter jet adventures in Russia or South Africa are told they will enjoy their flying adventure much more if they allow time to get over jet lag before climbing into the cockpit of a jet.

Lesson Ten: Customers Want Space Now

Incredible Adventures took its first reservation for a suborbital flight back in March of 1998. The company hoping to deliver flights by 2002 failed in its mission, but that hasn't discouraged others from placing deposits with the latest group of suborbital vehicle companies. People want space and they want it now. Or, at the very

least, they want the opportunity to start preparing for space now.

Earlier this year, Incredible Adventures received an interesting request from a man who had completed one of the company's MiG-25 edge of space flights in Moscow. He informed Incredible Adventures he had paid for a suborbital flight and wanted to purchase L-39 jet training to help prepare himself for the g-forces he'd experience during his space adventure.

What's interesting about 70 year-old Alan is that he's already had more preparation for space than most. He's flown 80,000 feet high at more than 2 ½ times the speed of sound in a Russian MiG-25. He's climbed Kilimanjaro and skydived at the North Pole. He is an experienced hang glider and pilot of small planes. Alan's future plans include a zero-gravity adventure with Florida-based ZeroG Corporation. Since the only official civilian space flight training program currently available is the one offered by Russia to its Soyuz passengers, Alan has taken it upon himself to create his own suborbital flight training package.

Alan's request helped shape future plans for Incredible Adventures. Logically, one can assume if someone with a high level of high-flying experience feels the need to start training now, two years before his scheduled flight, one can be sure others, especially those with little or no flying experience, are feeling the same way. Incredible Adventures is now actively involved in trying to establish a civilian space flight training center.

There are several reasons why a space flight training program is necessary. The following are two of the best ones:

Customers Don't Know G

Although most suborbital flight candidates will have heard the terms "g" and "zero-g", their personal experience with changing gravitational forces has likely been limited to the quick pull of elevators and rollercoasters. Customers need prior experience of high-g and zero-g in order to be capable of fully relaxing and enjoying their space flight. You don't want someone who's spent \$200,000 or more for a suborbital flight to be too nervous or nauseous to enjoy the view. You also don't want to be the passenger sitting

next to someone who becomes violently ill or suffers a panic attack at 300,000 feet.

Telling someone what will happen during a high-performance flight is no substitute for the experience itself. Incredible Adventures observed years ago that those who completed a subsonic trainer flight before climbing into a MiG enjoyed their MiGs Over Moscow adventure much more. Completing a less-expensive trainer flight first allows a customer to get over any initial nervousness about flying in a jet and to adapt to the sensation of wearing a flight helmet and pressure suit. An unplanned benefit to the L-39 trainer flight has been the knowledge it gives the Russian test pilot who accompanies the paying passenger. Pilots say they are more comfortable performing high-g maneuvers in a MiG if they've already seen how the customer has reacted to milder maneuvers in the trainer.

Companies developing suborbital vehicles have a vested interest in making sure their customers will enjoy every second of their flights to astronaut altitude. Happy customers lead to more happy customers and unhappy customers can spell disaster for a business. Pre-flight training will help individuals to get the most enjoyment possible out of a suborbital adventure.

Not Everyone Will Have the Right Stuff

As a condition for participation, any customer wanting to fly in a Russian jet fighter must first submit a completed medical questionnaire, a copy of a current EKG and a certificate of good health from a personal physician. In the 12+ years Incredible Adventures has been arranging high-performance fighter jet flights, only three applicants for MiG flights have been rejected for medical reasons. This is in spite of the fact the average customer is overweight and out of shape. The reason almost anyone can fly is that a MiG flight can easily be customized to suit the physical condition of the passenger. The physician at the airbase can dictate the maximum allowable g's recommended based upon a passenger's health profile. A pilot can always end a flight early if he deems it advisable. That will not be the case with a suborbital flight. One flight profile will need to fit all of the passengers on board.

A doctor's exam only picks up the potential physical problems. No doctor can predict how a

customer will react to wearing a helmet and pressure suit in a confined environment or how someone will react to flying upside down. Discovering one doesn't have "the right stuff" will be sad. Discovering the fact just days before a flight when the \$200,000 you've paid is non-refundable would be beyond sad. Making civilian space flight training available now allows individuals to make informed purchase decisions.

A civilian space flight training adventure could possibly serve as the "consolation prize" to those individuals deemed unable for medical reasons to travel 50 or more miles high. Someone's blood pressure or heart condition could rule out a suborbital flight but not necessarily disqualify them from getting a "taste of space" through enrollment in a modifiable training program.

Customers seeking a space adventure may also be lacking the right financial stuff. A civilian space flight training adventure could prove to be an affordable alternative or a "starter adventure" for those unable to currently afford the cost of a suborbital space flight.

The Next Incredible Adventure

Incredible Adventures has teamed with California-based Mach 1 Aviation to develop the outline for a civilian space flight training program. The training program will consist of three separate and distinct phases and incorporate the use of existing military aircraft and a privately developed rocket jet.

The first phase has tentatively been titled the "subsonic" phase. Day one of this training would begin with a lesson in atmospheric theory. Individuals will learn the effects atmospheric pressure changes can produce, including oxygen deprivation and the absorption of nitrogen, and the possible remedies. They will then receive instruction in how atmosphere relates to aircraft flight in a class that covers atmospheric tables, atmosphere pressure, Mach number, aircraft handling and aircraft flight profiles.

The most exciting part of this first phase of training for an individual will likely be the first introductory flight in an L-39, a Czech-made jet trainer currently flying in the US. A thorough pre-flight briefing will go over flight maneuvers

and their relationship to space flight and how sustained 4 g maneuvers can be performed to simulate an orbiter launch. Participants will also learn about GLOC, gravity-induced loss of consciousness, and how GLOC training can be used to build g tolerance. During this first L-39 flight, participants will also be introduced to negative flight and weightlessness.

Day two of the subsonic phase of training will represent many participants' first encounter with pressure suits. Individuals will spend the morning learning about pressure suits and how they are used in space and in high-performance jet flights. Before climbing into the L-39 for a second flight, participants will review pressure differences, suit hook-up and operation and aircraft safety and emergency systems. During the flight itself, an individual will experience how pressure suits operate in sustained g, weightlessness and negative flight.

The second phase of civilian space flight training as proposed by Incredible Adventures and Mach 1 Aviation has been given the working title "supersonic". It begins with an introduction to very high performance aircraft and an orientation to the MiG-21 jet aircraft. Time in the classroom will be spent learning about supersonic flight and how flight maneuvers relate to space flight. Topics covered will include GLOC training, zero-g and advanced physical clues.

After a review of the aircraft and safety and emergency systems, participants will complete their first flight in the MiG-21. They'll receive an orientation to high-speed maneuvering, buffet-loaded sustained g flight, and large atmospheric pressure and altitude changes. They'll also learn about zoom climbs, pressure changes and density changes.

Pressure suits are added on the second day of supersonic training. Classroom sessions will cover spacecraft considerations for space flight, pressure suit adaptation and physical adaptation to sustained g, altitude changes and zoom climb. The flight that follows the work in the classroom will focus on supersonic maneuvering, GLOC and weightlessness training, handling sustained g and advanced pressure suit training.

Mach 1 Aviation can provide the qualified instructors to conduct this program and L-39s and MiG-21s are readily available in the United

States, so the first two phases of a civilian space flight training program could be delivered easily to large numbers of individuals. The first two phases of training can be completed in just four days.

While the L-39 and MiG-21 represent two of the best space training platforms available to civilians today, the jets are not without their limitations. This is why Incredible Adventures and Mach 1 Aviation plan to build and operate a proprietary rocket jet, modeled after the N104 the US Air Force used to train astronauts for space travel. The rocket jet will be capable of flying a variety of flight profiles so that training can be made specific to each suborbital company's flight plan.

A retail price has not yet been established for the training flights, but costs are expected to be comparable to that of an Incredible Adventures Russian MiG adventure. The vehicle will be capable of a full power rocket launch, supersonic flight and a shuttle approach landing.

Conclusion

Preparing for space will be an incredible adventure with worldwide appeal. Participants will be the same doctors, lawyers, computer professionals and business owners who are flying jet fighters, floating in zero-gravity and diving with sharks today.

Incredible Adventures may not have set out to become a space tourism company when it first opened its doors back in 1993, but by always striving to fulfill the dreams of its customers, it has become one, and so much more.