THE TAKEOFF TODAY! PROGRAM MANUAL

Advanced Strategies for Overcoming Your Fear of Flying





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Foreword

Fear of flying is nothing more than a fear of the unknown. Since time began, human beings have been afraid of what they don't know and don't understand. When the earth was thought to be flat, the boundaries were inhabited by dragons. Comets in the night sky were believed to be "Harbingers of Doom" signaling times of great peril. And yet men and women surmounted their fears to gain greater understanding and further science. We must all surmount our fears of the unknown to prosper as individuals, whether it is talking to strangers, or fear of new and different things, or change. Fear of flying is much like this, a fear of the unknown.

No one has more reason to be afraid to fly than me. I was the one of the pilots of US Airways Flight 1549 which took multiple bird strikes, lost both engines, and ditched in the Hudson River. And yet, I was sitting in the cockpit, on the jump seat, flying into New York only 2 weeks later. I went back to flying the line myself after about 8 weeks. It would have been sooner except for media commitments. When I went back to flying, I didn't have even the slightest concern, not even the least twinge of fear. Why? Because, I understand what flying is all about. I have been flying for 34 years myself as a pilot, and I have been in the air my entire life with my parents, both of whom are pilots. I now have over 20,500 hours of flying time. That's almost 2 ½ years laid end to end constantly in the air. I hold an Airline Transport Pilot's License and many "Type Ratings" in transport aircraft.

Even for a pilot, my circumstance on January 15th, 2009 would give pause. Rarely is a pilot faced with something so completely out of their control. And while I know flying through a flock of birds and losing both engines again is possible, the chances of it happening are infinitesimally small. And frankly, it worked out pretty well even when it did happen. I fly airplanes without concern because I understand what makes them fly. I know that we have back-up systems to handle failures, and I know that pilots have procedures to address emergency situations. In fact, in the business, we don't even

refer to them as "emergencies" any more. We call them "non-normal" situations. Because the term "emergency" implies something out of a pilot's control, and things are never out of a pilot's control. He or she may just have to use a different means of compensating for the loss of a particular system or situation.

As a passenger though, you must understand that the source of your fears stems from a control issue. There probably is nothing you can do as an individual where your immediate future is so completely out of your personal control, than flying. Even discarding concerns for your own safety, your future is entirely at the whim of the airline you are flying on. You are dependent on them for food and drink. If the flight is late, or you miss your connection, you are stuck in Detroit hoping the airline will take care of you. Rarely is a person faced with such a lack of control. In your everyday lives, if you go to a restaurant and you aren't seated in a reasonable time, you can leave. If you are stuck in a traffic jam, you can get off at the next exit and take an alternate route. But in an airplane, you are completely at the whims of ABC Airways. This loss of control makes anyone anxious. On top of that, you are crammed in an aluminum tube with others and their luggage invading your personal space. You have a small window which doesn't give you much of a view of anything in the outside world. You have no idea what is going on. There are noises and jolts. You don't know where you are, or when you will be getting to your destination. You may be late, and you're worried about making your connection. And on top of all that, you're afraid to fly. A witch's brew if there ever was one.

But let's look at it another way, the way you should be viewing your flying experience. While you personally don't know how to fly, you are confident that there are highly trained, experienced professionals like myself up in the cockpit who absolutely know what they are doing. You know that maintenance personnel ensure that the airplane you are riding on is in tip top condition. You may be late, but there is a good reason for it. The plane was perhaps delayed earlier due to bad weather or to repair a maintenance item. Certainly no one would argue with necessity of that. There are noises and jolts, but if no one is saying they are abnormal, they must just be part of the process. Look around, does anyone else seem concerned? Maybe you miss your connection. C'est la vie. There are worse things. They probably have a nice Holiday Inn in Poughkeepsie. With bad weather delays, often your connection flight is late as well. Deal with that when you land. You are on this flight with these other people anyway so maybe strike up a conversation with your seatmates. When you have finished with your conversation, to pass the time, close your eyes, sit back, and imagine yourself riding a camel in Africa, or climbing to Machu Picchu in Peru, or hiking through the rain forest in Thailand. This sense of transporting yourself to another place is enhanced my wearing ear plugs further isolating your senses. Play mind games to counter the mind games your fears are playing on you.

The <u>Takeoff Today Program</u> is filled with explanations for what you are hearing, seeing, and feeling when you fly. Understand that the landing gear often "clunks" when it comes up or down as the hydraulic pressure drives the gear into the up or down locks. These things are NORMAL. Lightening travels for miles and miles in clouds. Just because you see a lightening flash just outside your window doesn't mean that there IS a lightening flash just outside your window. Turbulence is a nuisance that keeps you from reading your magazine, not a threat to your existence. This information will hopefully allay some of your fears. But mostly understand that "Fear of Flying" is not a rational response to your environment and surroundings, but an anxiety which resides within you. You can find ways to deal with the fear and you can overcome it.

As a pilot of great experience, who has literally survived a plane crash, I anxiously await my next flight. When you close that cockpit door, you leave all the troubles of the world on the other side. You are transported to a world of great beauty. There is no experience quite like picking your way through a thunderstorm line at 37,000 feet as you watch the storm cells grow and roil like living things before your eyes, the cloud tops blowing off downwind. Or the beauty of the night sky on a red eye flight. Turn down the cockpit lights, crank your seat all the way up, press your nose against the windshield and try to count the stars, an impossible and humbling feat. There's something about leaving the earth that puts all the things you thought were important in perspective. A pilot's view of the world I know. But make it yours. Use these pages to tackle your fears, and confront your anxiety. You shall overcome. Enjoy a carefree future of safe, efficient air travel.



Jeffrey Skiles First Officer US Airways Flight 1549 "Miracle on the Hudson"

Introduction

The very first thing I want to say is a heartfelt "congratulations". You've shown tremendous courage by taking the necessary steps to begin the journey to overcoming something that is challenging in your life, and if you put into action what you're about to learn in the <u>Takeoff Today</u>[™] program, I believe you can fully and permanently overcome your fear of flying just as myself and so many others have. It takes strength to change your life, so start by giving yourself a pat on the back for making it this far!

In case you don't know already, my name is Rich Presta, and like you, I used to suffer with extreme anxiety and fear while flying.

In case you don't know already, my name is Rich Presta, and like you, I used to suffer with extreme anxiety and fear while flying.

Using the techniques and lessons I'm about to share with you in the program, I completely changed my relationship with flying and anxiety, and in turn, altered the course of my life forever. My goal is to do nothing less than set your life in a new and better direction as well.

It's been a long time since I was an anxious flier, and for many years I flat out refused to fly at all, under any circumstances. I passed up on vacations, seeing new and different places, having fun, deepening relationships, and even funerals of family members because of my fear. My life now is much different...so much easier and just plain BETTER. I can fly wherever I want to in comfort and peace, without worrying about whether or not I'm going to be anxious or have a panic attack on board the airplane.

It took me many years to conquer my fear of flying, and believe me, I tried it all. Therapy, medications, books, other programs...you name it. I spent countless hours and literally thousands of dollars in an attempt to overcome my fear, but nothing seemed to help.

Eventually, I discovered the information I'm about to share with you that allowed me to transcend my fear and become not only someone who doesn't FEAR flying, but someone who began looking forward to travel and the experience of flight!

Flying wasn't the only activity I had trouble with however. I suffered with panic disorder, which means I lived my life with seemingly constant attacks of overwhelming anxiety. I thought I was dying or going crazy some days, and other days...well...I guess on other days I just tried not to think at all.

Using the techniques in the **Takeoff Today**[™] program allowed me to not only overcome my fear of flying, but my anxiety and panic attacks in general. Since then, I've become an internationally known author on the subject of conquering fears and anxiety, and have authored other best selling programs that have been used successfully worldwide by thousands of individuals and professionals. My books and programs have been on CNN, MSNBC, and the Discovery Health channel, and you may have read about them in Natural Health or Psychology Today magazine, or even heard about them on the

radio. They are some of the most trusted and widely used products available for conquering fears and anxiety, and I decided I wanted to take what I knew from my own experience with conquering my flying anxiety and assemble the ultimate resource for overcoming the fear of flying available anywhere.

"My books and programs have been on CNN, MSNBC, and the Discovery Health channel..."

I don't tell you these things to impress you. I tell you because I want you to know and understand that as I write this, I write it from the perspective of someone who has walked in your shoes. I not only lived a large part of my life with anxiety, but I successfully conquered it, and have since helped literally thousands of people do the same. I am no different, smarter, or better than you. I simply know different things now that allow me to live my life free from unnecessary fears or anxiety. Once you've finished with this program, you will know the same things I do, and in turn, can free yourself from the fears that have held you back.

How to Use the Program

The Takeoff Today™ program contains several components, so first I want you to understand how and when you use each.

The first component is the main manual you are reading now. This is where you should start, as it covers everything in the program and is the most comprehensive view of the material. Read the manual from beginning to end, taking the time to actually DO the exercises as I direct. Remember, for the program to be successful, you must DO what it

"Overcoming your fear of flying is not a spectator sport!" outlines, and not simply READ it. It is meant to be something you actively participate in - feeling better about flying is not a spectator sport!

You also may have received the audio version of the program. If you did, you can feel free to listen to the program in addition to, or instead of the manual. It is the same material as the written manual, simply in an audio format, much like any other audio book you may be familiar with. I personally recommend reading AND listening to the material for the best results, since you'll always learn something new as you go through the material in a variety of formats.

You may also have the **Takeoff Today**[™] video series as well. If you do, that is a wonderful way to review the core concepts and tenets of the program quickly and in yet another medium which will firmly etch the concepts in your mind. It is important that you first go through the unabridged program before relying on the videos, as they were created for someone already exposed to the foundational principles of the program.

The videos can be opened using QuickTime video player, which you probably already have on your computer. If you don't have a video player you can use installed on your computer, you can get it free from www.Quicktime.com.

Lastly, you may have been provided additional audio to use while in-flight or in preparation for a flight. These are primarily visualization audios which will allow you to practice the new skills and powerful techniques you learn in the program while mentally rehearsing a flight in your mind's eye. Please do not underestimate the power of this type of visualization. The audio I provide has been specifically engineered to guide you into deep relaxation and allow you to psychologically simulate an actual flight that can be virtually indistinguishable in your mind from an actual flight. Visualization has been shown to be extremely powerful in skill development, and is a critical part of the **Takeoff Today™** program since it isn't feasible to actually take practice flights on a consistent basis.

It will take time for you to learn to relax deeply enough for the visualizations to be as effective as they can be, so please have patience because it's worth it! You may also feel some anxiety in the early stages as you relax, rest assured this is normal and expected as deep relaxation is a form of giving up control you may unfortunately be out of touch with. With time and practice, your ability to relax can improve dramatically and you may find yourself unusually calm and collected throughout the course of your normal day - which is a nice side effect of the program! Start using the visualizations right away and you will become better and better at letting go and really "being there" in your mind and flying with confidence and comfort.

You may have also received the bonus report I authored, "The Anxiety Helix" as part of your Tactical Kit. This report is a wonderful companion to the program that clearly and quickly allows you to understand the true nature of anxiety, fears, and panic - and exposes the reality so you need not fear your own reaction in the future. You can read this report whenever it is convenient for you, but I recommend saving it until you have completed all the core Takeoff Today[™] components.

The 2X2 No Fear Flying Formula

Let's begin by making sure you understand the foundation for the <u>Takeoff Today</u>[™] program. I call it the 2X2 No Fear Flying Formula.

I think it's critical to keep things as simple and easy to remember as possible for them to be effective, and that's how I came up with the 2X2 Formula. What the formula represents is the fact that there are TWO things you have to do to overcome your fear of flying, and TWO times you have to do them.

Yep, that's it.

"You only need to do TWO

things to conquer your fear

of flying..."

Let's start with the first two things.

If you're afraid or uncomfortable flying, there are two primary things that on some level, for some reason, you don't trust.

One: The plane and its personnel.

Two: Yourself and your ability to stay comfortable and in control on board.

Think about it, is there really anything more to it? Let's look at some examples of things you may afraid of...

Are you afraid of the plane crashing? That's number one.

Don't understand how something that big and heavy can fly? Number one again.

Do you worry that your fear will make you lose control and do something that will embarrass you or put you in danger? There's number two. Go ahead, insert your own fear and you'll see that it really boils down to one of these two primary things you have to learn to trust, not just in your head, but deep down in your GUT.

That's the first half of the Formula, now let's look at the two times you have to focus on...

Other programs for the fear of flying have techniques or information whose goal is to help you stay a little bit more calm on board the airplane...you know, "cope". My techniques for overcoming fear are FAR more effective and can literally make you MORE relaxed in the air than you are on the ground, but more importantly, I address the OTHER time you need to stay relaxed, confident, and quiet your mind....do you know when that time is? Can you guess?

The days and weeks BEFORE the flight! That's right, you need to feel better before you even leave for the airport!

I know that when I was struggling with a fear of flying the time before the flight was very often the worst time - even worse than the flight itself! The weeks before I knew I had a flight coming up were miserable.

And that's the second half of the Formula, you need to address your fear:

One: On board the plane.

Two: During the days and weeks BEFORE the flight.

If you do those things and cover all four aspects of the Formula, you can conquer your fear of flying far easier and faster than you ever thought possible. Doesn't that make it seem a bit easier to understand? A little more achievable? Now you know that there's

really only a small number of things you need to do to conquer your fear, and you can say it in one simple sentence...

"Learn to trust the plane and its personnel, as well as yourself and your ability to stay comfortable and in control on board, not only on board the plane, but in the days and weeks prior to your flight."

Now let's start on making it happen. We're going to start with two very short exercises so you get crystal clear on your motivation for wanting to overcome your fear and discovering what it is you're REALLY afraid of...

Why Do You Want to Fly?

We're going to do a short exercise together...

I'd like you to figure out WHY you want to fly comfortably to begin with.

Be sure you REALLY know why...what's your motivation for wanting to accomplish something that no matter how you slice it, will be difficult at times?

Is it so you can fly for work and make more money so you can provide a better life for

your family?

Is it so you can see the world before you leave it?

For a honeymoon or wedding of a loved one?

Sit down. Figure it out. You can have more than one reason, but be sure it's YOUR reason. Not why your

kids want you to fly, or why your boss wants you to, or your spouse....I don't care about them. I want to know why YOU want to fly without stress and anxiety.



Why Are You Afraid of Flying...Really?

Now that you know WHY you want to overcome your anxiety about flying, I'd like to help you get to the bottom of WHAT you're afraid of about flying. You might be surprised that it's not what you think...

See, just being "afraid of flying" isn't enough, it's not specific. Not to mention that you're probably not REALLY afraid of flying...you're afraid of some aspect of flying...maybe feeling trapped, or a fear of an accident, or a fear of how it makes you feel. It's important that instead of just being afraid of flying you know specifically what you're really afraid of about flying so you can give yourself the proper comfort and security about those things you may encounter and so you can use the visualization sessions to their fullest.

Did you have a bad experience on board a plane? Maybe you hit what you considered bad turbulence and it frightened you and now you fear it happening again. Perhaps on

"You need to discover the core of your fear..."

a prior flight you got extremely anxious or even had a panic attack and it made you fear that you would lose control or that some other terrible thing would happen so now you don't want to feel like that again. What is at the core of your fear?

Let's do an exercise that will help. I'd like you to go someplace quiet, where you won't be disturbed, for about 30 minutes. I want you to spend that time writing out exactly what you fear happening on board the plane, if everything you feared going wrong actually did. When you write it out, I want you to write it out like a script, so that actors could play it out on stage...it should be that detailed and accurate. If you're afraid of the plane crashing...write it all out. What would happen? How would you feel? If you fear your anxiety will grow to a point that overwhelms you or makes you lose control, what would that look and feel like exactly? Would you try to open the doors or scream and be restrained or embarrass yourself?

Whatever you fear, write it out. Write, write, write. Try not to THINK, just let it flow. Don't worry if it doesn't make perfect sense, just keep writing.

Now when you're all done, see what you have. Have you identified what it is you're REALLY afraid of? It may not seem like a big difference, but believe me, knowing what your core fear really is can be tremendously helpful in helping you conquer your fear.

Maybe you'll even realize that what you fear isn't even that bad! If you fear that you'll be afraid and cry...that's not so terrible, is it? If you fear that you'll feel anxious and lousy for awhile until you land, that's not a good feeling, but as you'll learn in the remainder of the program, it won't hurt you.

As we get into the section on trusting the plane and its personnel, you may find that what you fear CAN'T happen. Maybe you fear the wings will break and fall off if you hit turbulence (they won't). Maybe you fear that you'll go bananas and open the door during flight (you can't do that either). Many things you're afraid of happening during the flight you'll come to realize during the program either aren't so scary after all or are impossible. It will feel terrific to simply let those worries and fear go...

Trusting the Plane and its Personnel

This section will help you understand exactly how planes fly, how jet engines work, and other aspects of flight that will allow you to put many of fears about flying at ease. Additionally, we'll discuss the training of pilots and flight crew so you can be certain that you are in the best of hands while traveling by plane.

Later in the program section, you will learn very powerful techniques and strategies for calming your anxiety in the days and weeks before a flight, and while on board the aircraft. Your news skills can help you transform from someone who was once fearful of flying to someone who



not only understands flight, but looks forward to the experience with complete trust in the airplane and their own ability to remain calm and confident on board.

I would like to thank the following flight crew who were interviewed and consulted during the creation of this section:

First Officer Jeffrey Skiles - Co-pilot of US Airways Flight 1549 which successfully landed in the Hudson River shortly after takeoff on January 19,2009, dubbed "The Miracle on the Hudson".

Captain Len Shorethose - Captain with a major US commercial carrier with over 20,000 hours logged who began flying in 1978. He currently flies a MD-80 out of Dallas Fort Worth airport.

Captain Stacey Chance - Captain for a major US airline for over 25 years and the author of the DVD "Prepare to Fly".

Captain Eric Simmons - Captain on an MD-80 for a major carrier, with over 21 years flying experience.

Chris Underhill - pilot for a major US airline with experience on the B737 and MD-11 both internationally and domestic.

Josh Martin - commercial/instrument/multi-engine/CFI-rated pilot who has been flying for 7 years. He currently flies a Cessna 525 Citation and is a flight instructor.

Carolyn Curtice - First Officer with a major US commercial carrier. She has accumulated more than 15,000 flight hours as both a United States Air Force pilot and during her commercial airline career. She currently flies the Boeing 777 out of San Francisco International Airport.

Kevin Kulik - air traffic controller trained by the US Air Force and certified by the FAA.

Denny Pollard - airplane mechanic who holds an Inspection Authorization and works for the FAA as an Airworthiness Inspector in Oakland, CA.

Kiki Ward - domestic and International flight attendant for American Airlines since 1986. She has been the recipient of the prestigious Professional Flight Attendant Award, been selected to work on charter aircraft for The Dallas Cowboys and Texas Rangers, and has acted as a flight attendant consultant for motion pictures and television productions. She is also the author of "the Essential Guide to Becoming a Flight Attendant". **Kevin Davis** - flight attendant for a UK based airline and has experience on over 3000 flights.

How in the heck do those big planes fly?

This is a big question, so let's spend some time discussing it, because once you learn what really keeps those big planes in the air, it can alleviate a lot of your fears and worries.

What makes planes fly isn't really incredibly complicated, but it is more than one thing. In order for you to truly understand it, I'm going to have to take some periodic steps back and explain some other things as well.

There are four main forces at play during flight, thrust, drag, lift, and gravity.



Gravity is the easy one. That's the force on the Earth that presses everything down towards the ground.

Lift is pretty much what it sounds like...the force that "lifts" things up into the air. Obviously if we want to fly, our lift has to exceed the force of gravity. Drag is the "friction" created by the air. If you've ever ridden a bike on a day when the wind was coming at you, you noticed how much more difficult it was to pedal because of the increased drag.

Thrust is what pushes an object forward, like you pedaling in the above example. If we want the object to move forward, the thrust needs to be greater than the drag.

So far so good?

Now before we go any further, let's talk a little about air pressure...

We don't feel it, but the air all around us is pressing down on everything from all angles. See, even though we can't see it, air is a "thing". It has substance. Believe it or not, we can weigh the air! Don't believe me? Well the mass of air is what pushes your hair out of shape on a windy day...if there was nothing there, wind wouldn't FEEL like anything. Air is a very thin substance relative to...let's say pudding...but it's a substance nonetheless.

Air Pressure is All Around Us



At sea level, the pressure of the air is just under 15 pounds per square inch. That means about 15 pounds of force is pressing in on you (and everything else) from every direction.

Have you ever read a recipe and it gave "high-altitude" directions? That's because the further away we get from sea level, the less air pressure there is. So people that live in places like Denver actually have LESS force pressing down on everything than someone in Chicago. Denver only experiences about 12.5 pounds of air pressure, so things boil and cook at slightly different rates. The important thing to remember for our purposes is that air pressure is LESS as we go up.

Alright, so we're sitting in a plane on the runway, and now we know we have this invisible substance called air pressing down on us from all directions. If we want to move forward, we need something to push the plane that way with a force greater than that of the surrounding air pressure. That force is called "thrust".

That's where the engine or propeller (or pedals if you're still riding your bike) come into the scene. They push the plane forward through the air and overcome the drag the air creates.

The more air pressure or drag, the more thrust that is required. If it's a windy day that creates a lot of drag, we need more thrust from the engines, or like we talked about, if you're riding your bike you need to pedal harder. If we're in Denver where the air pressure is less (what you probably hear called "thin" air), we need slightly less thrust because the air has less substance to it.

Now you're starting to understand half of the "mystery" of flight. Drag versus thrust. See, it's really not that complicated, right? What's important to take away from all this so far is that the thrust created by the engines move the plane forward, but it does NOT lift it UP.

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What lifts the plane is called....oh yeah, lift.

So now we've overcome the force of the air pressure keeping the plane from moving forward, which is big progress, but at this point all we have is a big car with wings. We still have that pesky air pressure pushing up and down on the plane.

Remember when we talked about the air being a substance? Well as the plane moves forward, the wings "cut" through the air. Some of the air moves over the top of the wings, and some of it moves under the wing. So far, no big surprise, right?

If you look at the shape of a wing though, you'll see that the top of the wing is curved slightly. It arcs up and away from the ground, like a little hill the air has to climb up and back down to get over the wing. The bottom is much more flat so the air that goes under the wing can just zip right by without having to climb up and back down that hill.

Let's say you had to run a race against someone, and the winner received \$100,000. You laced up your shoes, did some jumping jacks, and went to the starting line. When you got there, you had two choices. You could either run 100 yards on a flat surface, or run the same distance but in the middle of the course was a hill. Which would you pick?

The air above the wing needs to go faster over the "hill"

Right, the path WITHOUT the hill. Why? Because the distance with the hill is MORE than the flat surface. It goes back to the "shortest distance between two points is a straight line" thing we all learned about.

It's the same with the wing. The air going over the wing has a further distance to travel than the air going under the wing due to the "hill" shape. In order for the air at the top to keep up with air on the bottom of the wing, it has to move faster. Now here's the kicker...

The faster air moves, the less pressure it has.

So when we had 50% of the air pressure force pressing down on the top of the wing and 50% on the bottom of the wing, nothing happened. But if we get the pressure on the top of the wing to be LESS than under it by getting the air to move faster, we have more pressure under the wing and what happens when the force on the underneath is greater than the force at the top? It lifts and the wing moves up into the air.



Ok, so now we have thrust pushing the plane forward through the drag, and in doing so, it causes the wing to move through the air in such a manner that lift is created. Guess what? You're flying. Wheee!

So now that you're soaring through the clouds, now what?

Well two things have to happen for you to KEEP flying, and they're the same things that got you up there in the first place. You have to maintain your lift and thrust.

That's what the engines are for. The engines keep propelling you forward which helps create lift and keeps you flying. As long as the engines are pushing the wings through the air, the lift will be created just like it was for takeoff and you'll keep flying.

Remember how we said that the air is thinner (less dense and has less substance and pressure) the higher we are, like when we're in Denver? That means that the higher the plane is, the SAFER it is because it needs less power to maintain the same amount of thrust since there's less drag to overcome up high. So the higher you're flying, the safer you are! There's another reason you're safer up high as well, but we'll talk about that later.

If you re-read that last paragraph you'll see I was careful to say that the engines propel the plane forward and HELP create lift. The word "help" is important, because once the plane is flying, the lift will be there whether the engines are running or not.

Sometimes people think that if the engines were to stop working on a plane, that it would tumble out of the sky, and as you're learning, that just isn't true.

Now we know the air all around us has mass, and exerts pressure on us all the time. Believe it or not, the pressure of air isn't much less than the pressure of water! So when you're flying, you can view it as you flying through an invisible fluid, just like water. As a matter of fact, all of these forces we're learning about are the same whether we're discussing air OR fluids...they don't even use different formulas!

Once the plane is flying, it has two things that will keep it flying for a long time, with or without thrust. First is the wings themselves. They're designed to "float" on top of the air and maintain lift so less thrust is required, so we don't need as much fuel to keep going. The other thing is momentum.

If you're driving your car, and you take your foot off the gas, you don't screech to a halt. The car has momentum which carries it forward. It all goes back to Newton's Law that things in motion will stay in motion unless acted upon by an outside force. In your car, that outside force is the friction of the tires on the ground and drag from the air around it. In the air, the outside force that slows the plane down without thrust is drag.

But just like in your car, even without thrust, momentum carries it forward for quite a long time. Due to the design of the wings and the "thinness" of the air at altitude, even with no engine power, the plane can glide for a very long time. That's the other reason I mentioned earlier that makes flying higher safer, the higher the plane is, the further it can glide without power.

I'm sure you've made a paper airplane before, right? You build it so it has some wings, and then you give it a toss and it glides across the room. It doesn't fall immediately to the ground like a wadded up piece of paper would, right? You only provided the initial thrust by getting it in the air, the rest of the flight was all gliding.



I'm sure you've even heard of a glider. These are planes that have no engines whatsoever, and are towed by another plane and then let go, and they glide until they land gently on the ground. Same with hang gliders...no engines, they just glide like eagles until they land.

Planes even have something that's called a "glide ratio", which basically means how far it can glide without power, based on its height. Most commercial aircraft have glide ratios of about 15:1, which means it will glide fifteen feet for every foot it descends. That means that if a plane shut down all engine power at a fairly typical altitude of 38,000 feet, it would glide for 100 miles! So if you're concerned about the engines quitting and the plane falling out of the sky, you can rest assured that it's simply isn't physically possible. You would be hard pressed to be anywhere in the continental United States that doesn't have an airport within 100 miles (not to mention that as you'll learn, a complete engine failure is virtually impossible). Don't underestimate the quantity of airports either. In the event of an emergency, such as someone having a medical emergency on board, it would be rare for a flight to be more than 15-20 minutes from an available airport.

Want to know a secret? Planes glide on almost ALL flights. When the plane approaches its destination, the pilot typically brings engine power down to idle to save fuel, and simply glides right down to the runway. On your next flight, pay attention and you'll notice it, it will get much quieter all of a sudden! The space shuttle glides all the way from the outer atmosphere when it lands...it doesn't use any engines, and it only has a glide ratio of approximately 1:1!

Of course, the height is a big factor in determining the planes glide ratio, so what happens if an engine fails before it gets to cruise altitude?

By law, a commercial jet has to be able to takeoff and fly on only one engine. So even in the incredibly rare event of an engine failure on takeoff, the plane would simply takeoff, circle back, land, and fix the engine. Pilots practice this frequently in simulator training.

On your next flight, remember, flying isn't a "mystery". Your plane is being held up by the air...just because you can't see the substance, doesn't mean it isn't there! It's just as real and strong as any other force, like water or even the chair you're sitting on.

Planes don't "fall". Sometimes you'll hear people say that their plane "fell" a few hundred feet...again...that's impossible. Pilots will at times increase or decrease height for any number of reasons, to avoid turbulence, weather, or another aircraft, but planes do not fall. Even during severe turbulence, the altitude gauge on a commercial jet barely registers a change since the plane is only really moving a few feet.

"Air pockets" are also about as real as unicorns. There is no place in the sky that is somehow without air. It's no different than saying that there are spots in the ocean with no water, it makes no sense. There are places with different wind speeds that meet or air pressure changes due to things like mountains, and that can cause a bumpy ride, but they're not dangerous and certainly aren't missing any air.

Let's move on to everyone's favorite topic....turbulence.

What is turbulence? We've already talked about what it isn't...it's not air pockets and it's

"You need to understand what happens during turbulence..."

not the plane plummeting through the sky. Turbulence is really nothing more than "bumps in the road", no different than you get while driving.

The next time you're in a car, close your eyes for a few seconds and pay attention to how bumpy the ride actually is (as long as you're not the one driving!). You'll see that even what we normally consider a very smooth ride, is actually pretty bumpy, even bumpier than most turbulence!

I think that's the first thing to realize...plane rides are typically about as eventful as sitting on your couch in your living room. Would you be able to drink a cup of hot coffee without a lid in your car without spilling it all over the place? I doubt it. But that's how incredibly smooth plane flights usually are...they serve beverages and people rarely spill a drop. There simply isn't very much to cause bumps at cruise altitude.

But of course, every once in awhile, the plane ride can get a bit bumpy, and although it isn't dangerous, it can be a bit unnerving if you don't understand what's happening. Remember that what one of the major forces at play in flight is lift, which is caused by air pressure. Well air pressure can fluctuate slightly. It's always there and in more than sufficient amounts to keep the plane in the air, but when the plane flies through an area of high pressure to lower pressure, or vice versa, it hits a "bump". Why does the air pressure change? Usually due to the sun warming the air, or wind currents meeting, or mountains changing the direction of winds.

Have you ever been walking behind a building on a windy day which blocked the wind and then when you stepped out from behind it made you stumble a bit as the wind hit you? That's what can happen when a plane flies through a mountainous region or from one jet stream to another. But just like when the wind hits you, it only makes you stumble for a brief moment, and it isn't dangerous in the least.

Severe turbulence can be dangerous, but advances in detecting severe turbulence make it very rare. Pilots fly around areas of strong turbulence and thunderstorms so there isn't any danger, and mostly, so the passengers don't have to endure the bumps. Don't forget, the pilot wants to get home safely too and wouldn't put anyone or themselves in any danger.

Commercial jets are built to withstand much more turbulence than would ever by typically seen on a flight. The plane's strength is in its flexibility. On the ground, the plane looks like a giant piece of steel, but in actuality, the wings have an incredible amount of flex and maneuverability built into them. Just like a blade of grass bends with the wind while an oak tree may topple, the more flexible the wings are, the safer they are. If you go to the resources section of the **Takeoff Today™** website, you can watch a video of an actual wing flexibility test conducted by Boeing on a commercial aircraft. During the test, they actually destroyed the plane by bending both the wings up until they broke...and as you'll see, they were almost touching one another above the plane!

Turbulence is uncomfortable, but not something dangerous to the airplane. However, you can get bumped around a bit, so it's best to stay seated and buckled in during a rough patch. Not because the plane may have a problem with it, but so you don't stumble or bump your head.



Sometimes you'll hear someone say that they flew threw a thunderstorm. More than likely, they didn't. Storms seem deceptively close from the air, and a pilot would never fly through a thunderstorm, nor would air traffic control allow them to. Rain is inconsequential, but a pilot would not risk their livelihood by flying through a thunderstorm. Not to mention that severe weather is usually pretty easy to

predict and avoid using weather radar and other technology. The weather radar in commercial planes can detect the exact position of storms 160 miles away. If the weather is even close to being too questionable to fly in, the plane will either fly around it, or land at an alternate airport. Flying through weather bad enough to be concerning is illegal and closely moderated by the FAA. So if you're flying, you know that you can be assured it's safe otherwise they wouldn't be doing it!

However, military and civilian planes have been flying INTO hurricanes since 1944, and these are planes that had NOT been reinforced for storm flying. Even the most severe of weather is no problem for a commercial jet. Rain doesn't affect the air, which what's holding the plane up safe and sound, right?

Well what about lightening? Lightening can strike a plane, and in fact, routinely does. Planes even have "wicks" on the tail and wings of the plane to diffuse the electricity from a lightning strike. Besides leaving a small, dime sized dimple of the airplane, a lightning strike is no big deal.

Whew! I bet you know more about how planes fly now than anyone else on board your next flight besides the pilot!

Now let's talk a bit about the safety precautions taken on board a plane.

Everything of consequence has a backup on board a commercial aircraft. Some even have backups for the backups!

There are multiple engines, power sources for electronics, and manual methods of doing the vast majority of tasks. However, as comforting as all of that is, what I think is MOST comforting is that at its most basic, the pilot doesn't need most of what they have at their disposal to fly!

Without electronics, the plane flies just fine. It would be dark and back to the basics, but the pilot could fly safely. Again, it's sort of like driving your car. If your speedometer, radio, and air conditioning all broke at the same time, it would be a different ride, but the car would work the same.

This is a good time to talk about how jet engines work...

The engines that power jets are much, much simpler than the engine that powers your car, or even your lawnmower.

With a jet engine, the air is pushed through a large fan that in turn, forces the air through what is called a compressor and into a bunch of smaller fans called turbines. The turbines compress the air and heat it, and the air is directed through a stream of fuel. The compressed and heated air ignites the fuel, which expands, and is forced out the back which in combination with the main fan, provides thrust. When the fuel ignites and expands, the exhaust spins a series of smaller fans, which in turn spin the turbines and main fan, so all that is needed for a jet engine to work is the fuel supply. You don't need spark plugs, fancy electronics, computers, or anything else that you probably have to keep your car running. They're really very simple and that's why they're so reliable, there's not much to break on them!



Barring fuel starvation, there just isn't too much that can stop a jet engine from working, and like you know now, even if it did, there's more than one and one is all that's needed to fly the plane safely.

Now that you're crystal clear on why planes don't just tumble from the sky, and that the physics of flying isn't really that complex, maybe you're concerned that the plane will accidentally hit something while in flight or landing.

The first line of defense of that happening is the fact that airliners are always in contact with Air Traffic Control (ATC). All aircraft are equipped with a transponder that generated a radar return so ATC can identify them and maintain safe separation between the planes. Additionally, airliners have Traffic Collision Avoidance Systems (TCAS) on board that alerts them to other traffic in the vicinity and directs the pilots to climb or descend as needed. Lastly, but maybe most importantly, pilots are trained to keep an eye out the window for other aircraft.

There is also a Ground Proximity Warning System which broadcasts warnings if the plane approaches the ground without proper landing configuration. There is a terrain warning system that has a ground elevation database which can provide look-forward warnings for the pilot's flight path.

So let's step through what would have to happen for the plane to crash into another plane, we'll use two hypothetical planes named Flight A and Flight B.

The pilot of Flight A would have to disregard all training and not maintain the proper separation between other planes. The co-pilot would also have to allow this. The air traffic controller watching the flight would have to miss it too, and so would his supervisor. Both the pilot and the copilot would have to ignore the deafening warnings from the on board Traffic Collision Avoidance System. They would also have to not see the huge plane out their windshield. Oh yeah, and ALL these things would have to ALSO go wrong on Flight B as well.

Pretty unlikely.

So what about the "near misses" you occasionally hear about on television?

Usually, that's journalistic sensationalism. A near miss is when two or more aircraft get too close to each other, but what the FAA considers "close" is different than you may think.

ATC has a minimum separation standard that is 3 nautical miles laterally and 1000 feet vertically. While in route, the minimum standard is 5 nautical miles lateral and 1000 feet vertical. If two aircraft come closer than these measurements the controller will immediately be stood down pending an investigation. There is no allowance for error or subjectivity. If the controller allows the planes to break the separation standards, even by a couple of hundred yards, the FAA and their supervisor are alerted and quite a bit of explanation is required. An aircraft coming within 4.9 miles of another aircraft is hardly a near miss, although it makes for a good news story.

How about the landing gear? What if that gets stuck?

They've thought of that too. On most aircraft, the landing gear's natural position is down, it actually has to be held UP. So if hydraulics were to fail, the landing gear would



fall down and lock in place using gravity, not stay retracted. If all else fails, the plane would land on its belly. It's been done many times and although it causes some damage to the plane, is a fairly safe, but highly unlikely maneuver.

It feels at times like the plane is turning very hard, and maybe you're afraid it

will roll right over. Even though it feels like the turns are extreme, in reality, they're rather insignificant. Climbs are typically 18 degrees or less, and banks are 33 degrees or less.

Planes are also designed to fly straight by default due to the slightly raised angle of the wing called "negative dihedral". All that fancy word means is that if the pilot takes their hands off the controls and doesn't touch anything, the plane will fly straight and level unassisted. This makes it not only safer, but makes it so the plane will not "accidentally" bank too steeply. Getting the plane to fly any way but straight and level actually takes some effort!

Maybe you're concerned that the door will be opened during flight. The plane door is shaped in such a way that once the aircraft is pressurized, it is impossible to open. I hate math as much as you do, but let me do a little just to prove the point...

If the airplane door is 6'x3' in size, that is 18 square feet, which translates to 2592 square inches. At 30,000 feet, aircraft pressurization would be 8-8.5 pounds per square inch (psi). At 8 psi, there would be over 20,000 pounds of pressure holding the door closed. As I write this, the world record for the bench press is 1,010 pounds, or about

5% of the strength required to open a door in flight. The towing capacity of a Ford F150 is about 6000 pounds, so a truck couldn't pry it open or even come close.

Now let's talk a bit about the training that pilots go through.

Becoming a commercial airline pilot takes incredible determination, training, and patience. Pilots typically either have a civilian or military training background, most pilots would agree that one is no better than the other and airlines attempt to hire from a variety of backgrounds. A pilot I interviewed for these questions told me that in his new hire class he had, "fighter pilots, tanker pilots



and bomber pilots from the military and regional jet captains, corporate jet pilots and long-haul freighter captains on the civilian side."

Once hired at an airline, initial training lasts two to three months and involves extensive classroom instruction on all aircraft systems, company policies and procedures culminating in an oral exam given by a company check pilot. Upon successful completion, the candidate will begin simulator training where they practice endless instrument approaches, engine failure/fire procedures and emergencies of every kind dealing with abnormal operations of all systems. This is capped off by a check ride in which the check airman can test a candidate on any and all lessons he has learned over the training cycle.

Once the check ride has been passed, the pilot will fly with yet another check airman during Initial Operating Experience (IOE). After IOE the pilot is an official probationary first officer.

During the first year of employment each captain he flies with will submit a detailed critique to the chief pilot outlining his performance. At the end of the probationary year, and every year after, another check ride will be taken.

At most airlines a pilot will fly as first officer for about ten years before upgrading to captain, as a sort of apprenticeship. A failed oral exam during initial training can result in termination. A failed check ride will certainly result in termination. Poor performance during IOE can result in termination. Negative comments from a captain can get a first officer terminated. A poor recurrent check ride (annually for first officers, twice a year for captains) can result in termination. Once a pilot is fired from one airline his chances of ever being employed again are nil.

You can be confident that by the time a pilot sits at the controls of a commercial aircraft, they know what they're doing! All flight personnel, including mechanics, flight attendants, air traffic controllers, and ground crew are highly trained, tightly regulated, and more than qualified to ensure over 1.8 million people in the United States alone arrive safely at their destination every day.



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Fearful Flier Question Soup

Below are questions common to fear fliers, along with their answers.

How come shortly after takeoff it feels like the plane is falling?

This is usually due to what is called "noise abatement". In order to reduce noise for the people that live near the airport, after gaining sufficient speed and altitude for climb, the pilot will reduce power to the engines shortly after takeoff. This quieting of the engines, slowing of speed, and decrease in angle of climb, can make it feel like you are falling, but in fact, you are still climbing, only less rapidly.

What if the pilot falls asleep on a long flight?

The FAA requires two pilots in the cockpit for all commercial flights. On flights over 8 hours, there is an additional pilot who acts as a relief pilot and can replace/relieve the other two. For flights over 12 hours, there are two additional pilots. The Boeing 777, as well as the Boeing 747, also has a system that notices how often the crew input changes to the systems or use the radio and gives the crew an aural alert if more than a few minutes go by without anything be altered.

Is it safer to fly during the day or at night?

While the airplane traffic is denser during daylight hours, pilots are human and their physiology is to be awake in the daytime and sleep at night. Pilot unions recognize this and have negotiated extensive rules about all-night flying and the length of duty time to give pilots the opportunity to rest and to be rested before their flights to ensure maximum safety. Also, because of our excellent instrumentation, and lighting and procedures at airports, landing at night is no different from landing during the day.

What is a 0/0 landing?

0/0 landings, or landing in zero visibility was virtually impossible before the technology of today. We now have aircraft that can pretty much land all on their own using the Instrument Landing System (ILS). This allows a commercial aircraft to land in thick fog perfectly safely. In fact, a flight attendant interviewed told me that the "autoland" is better than any pilot they've flown with!

Can I trust the autopilot?

Modern autopilots are amazing computers that can safely takeoff, fly, and even land the airplane! Combined with well trained and qualified pilots, they are one of the reasons travel by plane is so remarkably safe.

Are commuter pilots as qualified as other pilots?

Pilots on commuter airlines are completely qualified, both from the eyes of the FAA and the eyes of the airline. Certainly pilots flying for the larger airlines may have more experience, but that doesn't necessarily mean that you are at an increased risk when flying on a commuter airline verses a major airline. Commuter airline pilots complete extensive training upon hire and refresher training every few months, just as the pilots of major airlines do. This involves ground **"Commuter pilots are held to the**"

instruction and training in the full-motion simulators.

'Commuter pilots are held to the same standards by the FAA."

Now I understand why jet engines are so safe, are propeller planes safe too?

Absolutely. Airlines will typically operate turbo-props on shorter routes where jets would be less efficient. Jet engines burn less fuel the higher they are operated. On short routes there may not be enough time for the aircraft to climb to the optimal altitude to take advantage of that efficiency. A turbo-prop engine will use less fuel at the lower altitudes.

What about international flights...how does everyone communicate with one another?



The international language of aviation is English so communication is not a concern.

Whenever the plane lands it get incredibly loud and sometimes on the approach the plane starts to shake. What the heck is going on?

That loud sound after landing is the reverse thrust. To assist in slowing down after landing, some airplanes have internal engine baffling that directs the exhaust airflow from the engines forward. Some other planes have external clamshell type doors that open and deflect the airflow forward. The loud noise is just the exhaust airflow that is now being deflected forward instead of backward to help slow the plane. That, along with the spoiler panels on the wings and of course the brakes all combine to slow the plane down after landing.

As far as the occasional shaking you may feel on approach, that is usually caused by the spoiler panels on the wings being raised, which makes the wings slightly LESS aerodynamic to help slow the airspeed of the plane. Planes glide so well that even without thrust we need to make them less aerodynamic to slow them down!

What do the flaps on the wings that move up and down do?

The flaps on the wings that move up and down are called ailerons. Remember what we learned about lift earlier and how it is created by the "hill" on the top of the wing? Moving the aileron up changes the shape of the wing and creates a bigger hill for the air to climb over, which in turn makes it move faster, which decreases pressure above that wing. Less pressure above the wing compared to below will make that wing rise, which banks and turns the plane.

Where is the safest place to sit on board?

Planes are so safe, where you sit makes no difference from a safety perspective.

How fast is the plane going at takeoff?

It depends on the plane, weather, runway length, and other factors, but approximately 150 miles per hour.

What do I do if I feel claustrophobic?

The RIDE Technique, Red Sock Relaxation, and other skills you will learn in the remainder of the program will help dramatically with any anxiety you feel on board due to claustrophobia.



What if we run out of air or the pressurization system fails?

You won't run out of air. The air in the cabin is from the outside of the plane and is pressurized, it isn't stored air on board. Sometimes you will hear that the air on board a

plane is "recycled", which is true, but so is the air in a large number of office buildings. In fact, the air in a commercial plane is often far cleaner than the air you may be breathing at work!

If the plane were to lose pressurization, which is rare, it is easily remedied. The plane would simply descend to below 10,000 feet where no pressurization is needed. The plane would fly just fine at this height, and you would be able to breathe just fine. The plane would simply fly less efficiently from a fuel perspective due to the thicker air, but that would be more of a concern to the airline's accountants than the passengers.

What is a "touch and go" landing?

They are very rare, but a "touch and go" landing, or an aborted landing, is when the plane touches down on the runway or comes close, and then for some reason, takes off again.

This can be a frightening situation because it is unexpected, but is perfectly safe. When the planes come in to land, it must do so with sufficient power to take back off again if necessary. This may be because the pilot sees something in the runway, or another plane hasn't completely cleared the end of the runway yet, or the pilot thinks the runway has too much ice or snow on it, etc. It is always done as a precautionary measure.

If this happens, the pilot simply applies thrust once again and takes off again to circle back and land again when it is clear. ATC ensures that every flight has the ability to perform a touch and go, so it is just as safe as taking off from your destination airport.

Can I have a drink to help me relax?

That's up to you. In my personal opinion, if you need to drink to relax, you would well be served by learning a new and better way, like you will in the remainder of the program. However, if one drink helps you take the edge off, as long as you're not taking any other anti-anxiety medication and it is ok with your physician, there's probably nothing terribly wrong with that either.

I was on a flight that almost crashed, why shouldn't I feel afraid?

If you were on a flight that experienced a situation problematic enough to be a serious threat, I don't doubt you are fearful, and rightfully so. However, there are two things we have to consider.

First, the statistical odds of being on a flight with a problem are astronomical. The odds of it happening TWICE to the same person are virtually impossible.

Second and most importantly, I have to ask what makes you think the flight was at risk? The chances are very good that regardless of what you or your seat mates thought, the pilot was never concerned in the least. Unless your flight was on the evening news, the oxygen masks came down, ambulances were waiting on the runway when you were landing, or at any point in the flight you had to swim...I doubt you were truly in any danger at all and it was simply a matter of misunderstanding and faulty perception.

How does de-icing work?

De-icing means there is either a buildup of snow and ice on the airframe due to local



weather conditions or that during ground operations prior to flight an accumulation may take place, such as when it is snowing at the airport. Ice changes the way the wings create lift by disrupting the airflow over the wings when in flight. It also adds unnecessary weight to the airframe. Today's de-icing procedures allow any ice accumulation to be removed using a heated chemical solution, then a different fluid is applied to the wings which actually traps falling snow and then sheers off during takeoff taking all that snow with it.

What is wake turbulence?

I said before how the forces that act on boats in water are similar or the same to those that act on airplanes in flight, and then air is just slightly thinner than water. This is another example of that.

If you've even been boating, you know that boats leave what is called a "wake" as they pass through the water. A wake is the disturbance of water behind the boat as it slices through the water. You know that when water is disturbed, either by dropping something into it or by wake, it dissipates gradually, getting less and less severe as it moves further away from the point of origin.

The exact same thing happens with aircraft in the sky, the only difference is that we can't see the wake because the substance is air and not water.

As a large plane flies through the air, it creates a wake behind it, and if another plane flies through that wake, it will get jostled around, just as if a boat passed through the wake of another craft.

Fortunately, wake turbulence is easily predictable, since although we can't see it visually, we know exactly what causes it and where all the planes are. Therefore, ATC simply has guidelines for how much distance planes must leave another for their wake to dissipate based on their size. For instance, on landing, depending on the two airplanes' size in relation to one another, four to eight nautical miles must be between aircraft.



To Be Continued...

I hope you enjoyed and got some value from what you've read so far from the <u>Takeoff Today™ Program</u>!

To keep reading about how planes fly and have more of your questions answered, go get the complete program by <u>clicking here</u>. You'll receive the rest of the manual, the complete audio version of the program, the two hour video series, and the tactical kit to use in preparation for an upcoming flight and while on board the flight itself, all for less than you'll probably pay for the ride to the airport! Your results are **GUARANTEED**, or you won't pay, it's as simple as that.

You'll not only finish learning about how planes fly and other important information about flight and the aviation industry, but you'll also learn how to control you own reaction about flying so you can fly in complete control and confidence, with a quiet peace of mind. Take a look at just a small handful of things you'll learn:

- The easy to learn four step technique that can **stop your anxiety or panic** dead it's in tracks and put you back in control of your emotions.
- The simple strategy for conquering your anticipatory anxiety about an upcoming flight.
- I'll explain why affirmation and positive thinking don't do **ANYTHING** to help with your fear...and I'll also tell you **WHAT DOES**.
- You'll learn the techniques I've used to help thousands of other clients just like you, such as Red Sock Relaxation[™], Shadowboxing, Ringing Your Own Doorbell[™], The RIDE Technique[™], and more. You won't find these **ANYWHERE** else.
- What REALLY causes your anxiety and panic to escalate and how to STOP IT FAST.

- What causes your **scary thoughts** you just can't seem to stop and how to kick them out of your head for good!
- The role your Reticular Activating System plays in keeping you afraid of flying.
- Why some people LIKE those feelings of anxiety and actively seek them out...and how you can learn to think like they do.
- How to stop worrying about **losing control** or doing something humiliating on board the plane.
- How to not feel "trapped" on the plane.
- What the single **WORST** thing you could do if you have a fear of flying. As long as you do this, I don't think you'll EVER improve.
- What you need to do, **AND AVOID**, the day of your flight that can have a tremendous impact on your anxiety (or lack of it)!
- I'll share with you my "Golden Rule" of fear eight words that can change everything.
- And a ton more...

There's no better time than now to overcome your fear of flying, and it's never been faster and easier than it is with the <u>Takeoff Today Program</u>. To get started with the complete and full guaranteed version, just visit the link below:

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I want to learn more or order the Takeoff Today Program now!

I'll see you on the runway.

Rich Presta