

Skydiving

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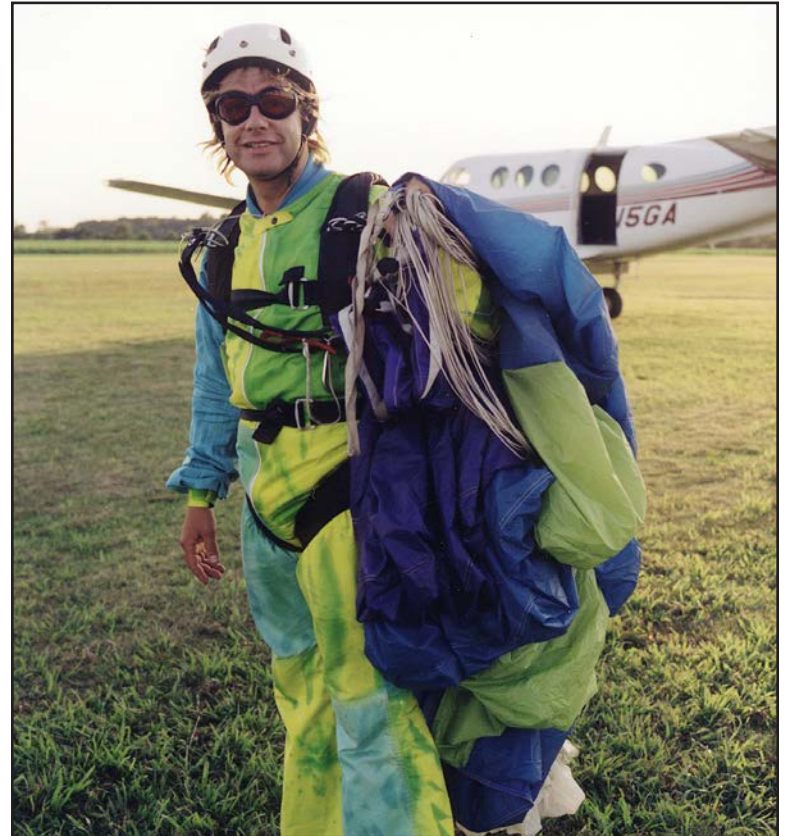
Skydiving



An Interview with Bob Gates
Conducted by Kathie Lester

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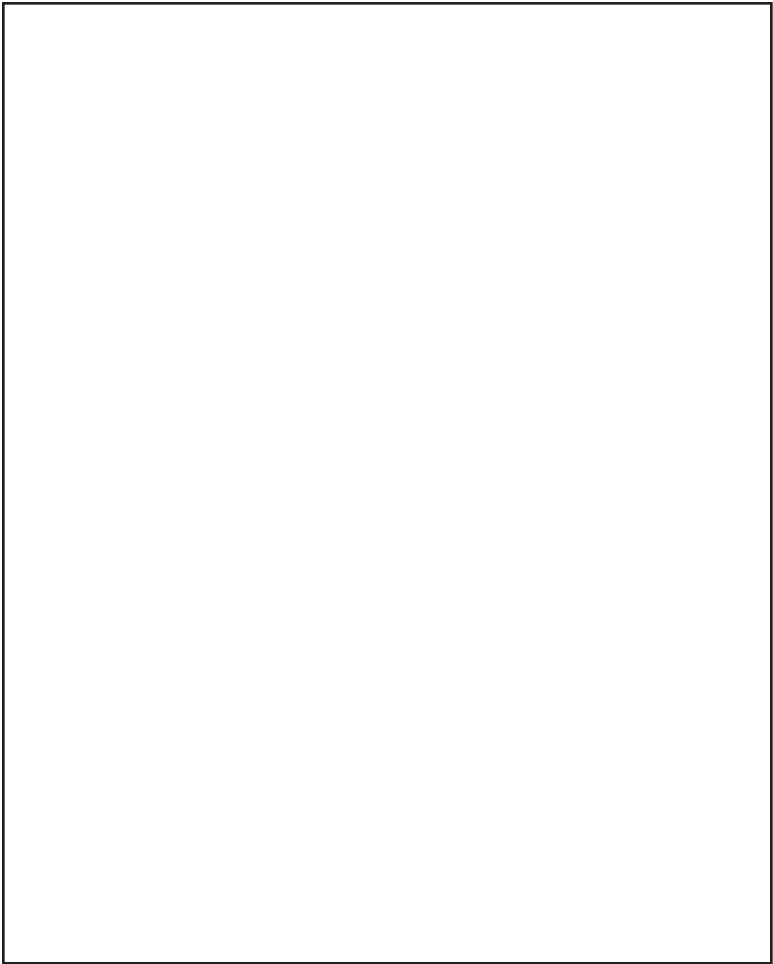
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Correlation

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GLOSSARY

adrenaline	a hormone that makes your body feel tense and excited (p. 22)
altimeter	a meter that measures distance from the ground (p. 11)
arch	a skydiving position in which a person falls stomach-down with the hips thrust forward (p. 5)
birdman suit	a suit with fabric stretched between the arms and legs to allow for a slower free fall (p. 16)
canopy	skydiving term for the fabric of a parachute (p. 7)
disciplines	different forms of one activity (p. 18)
free fall	falling without anything to slow you down (p. 9)
paratroopers	parachuting military soldiers (p. 24)
riggers	professional, certified skydivers and parachute packers (p. 14)
ripcord	the cord that releases the parachute and allows it to open (p. 11)
static line	a cord, attached to an airplane, that automatically releases a parachute (p. 5)
tandem	done with two people (p. 14)
toggle ropes	ropes on either side of a parachute that allow the skydiver to steer (p. 14)
wind resistance	the force of air pushing against a moving object (p. 10)

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Bob Gates

INTRODUCTION

Bob Gates is the owner of, and instructor at, Cleveland Parachute Center in Cleveland, Ohio. He is married and has two children who are both skydivers.

Interviewer: How did you get started in skydiving?

Bob: My dad was one of the pioneers. When he thought I was mature enough, he put me through a class. So I started jumping because I grew up around it.

- Sport parachuting, or skydiving, developed after World War II using surplus military parachute equipment.
- The first parachutes were round, shaped like an umbrella, and could not be steered. They were originally made from silk. Today's sport parachutes are rectangular and are shaped like an airplane wing. They are designed with ropes and toggles for steering. Nylon and Kevlar® are the most popular materials.
- Parachutes used for tandem jumps are larger so they can carry the weight of two people. Very large military parachutes are sometimes used to drop heavy equipment from airplanes.



Equipment being dropped from a military airplane



Bob Gates and a tandem student prepare for landing.

Skydiving Trivia

- Parachutes may have been invented 900 years ago in China. More recently, in 1797, they were first used to jump from hot air balloons.
- Parachutes were first used to jump from airplanes in the early 1900s. The first military use of parachutes was in World War I.
- In World War II, the most famous use of parachutes was on D-day. **Paratroopers** (soldiers using parachutes) jumped from airplanes and landed inland not far from the beaches where Allied soldiers were coming ashore.

FIRST JUMP

Interviewer: How old were you when you made your first jump?

Bob: I was 13. It was scary and exciting at the same time. I remember wondering as I left the airplane what the heck I was doing.

Interviewer: Did you jump by yourself the first time?

Bob: Yes. It was a **static line** jump, where the parachute is opened for you. The static line is 10 feet (3 m) long and is attached to equipment in the plane. When you jump and are 10 feet out, the line pulls a pin that releases the parachute. It takes about five seconds for the parachute to open fully. You steer the parachute down and land it yourself.

I remembered to do the **arch**, which means to spread out and push your hips forward. That helps make you stable as you fall through the air.

Interviewer: What happens if you don't do that?

Bob: You can flip. If you're flipping when the chute's opening, you can get tangled in the lines.

Interviewer: What did it feel like the first time you jumped?

Bob: I remember the quietness. No matter where you are, even if you think it's real quiet, there's noise. But during that first ride down there was absolute silence.

Interviewer: There's no sound of wind rushing?

Bob: No. It was definitely a unique experience to have no sound.



Four-person star formation

I believe we get addicted to the adrenaline rush. I notice it especially during the winter when I'm not jumping much. Most experienced skydivers jump every week in the summer. During the winter we could go months without jumping. I notice a big attitude change during that time, until I get to do a jump.



Tandem jumping allows a new skydiver to jump with an experienced teacher using a parachute built for two.

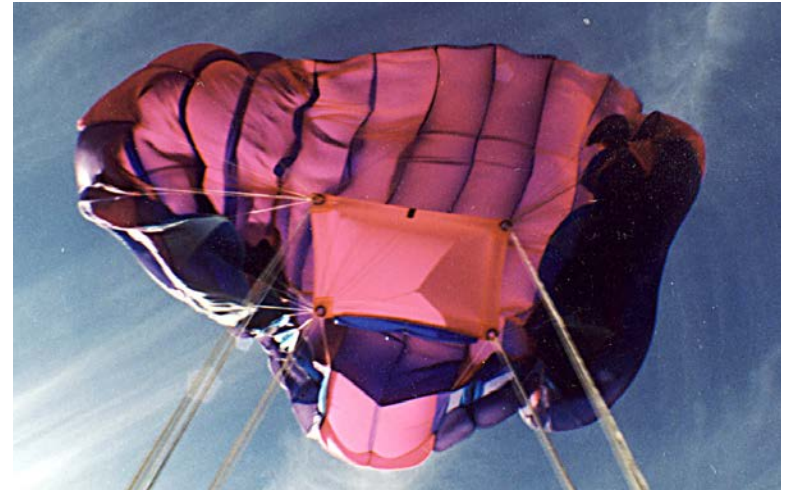


You can really fly when you're skydiving!

WHY BOB SKYDIVES

Interviewer: Why do you skydive?

Bob: Most skydivers are really nervous at first. I remember having butterflies in my stomach every time for my first hundred jumps. But we skydivers love the feeling of extreme excitement—the **adrenaline** rush—when we jump. So even if we're scared, we continue to jump. Eventually that fear goes away. I've done over 4,000 jumps.



Parachutes sometimes don't open properly, such as in this photograph. That's why skydivers wear reserve parachutes.

SCARIEST MOMENT

Interviewer: What's the scariest thing that's ever happened to you?

Bob: I had a **canopy** collision once, which means my canopy collided with someone else's. The other person fell away, and I was left tangled so that my legs were tied up in the chute. I was dropping to Earth, and the chute was opening up and collapsing, then opening up and collapsing. There was a moment when I didn't think I was going to make it. Luckily, it opened and stayed open just before I hit, so I lived through that one.

Interviewer: If your legs are tangled, does that mean you're not able to land?

Bob: It means I couldn't get rid of the chute or do anything. I had opened my reserve chute, so I had both chutes out, but they were still collapsing and opening. My legs were still tangled in the lines when I landed. Instead of landing on my feet, I landed on my back. I survived that, but it was a scary moment.



Good training and faith in the equipment will allow a skydiver to handle almost any difficult situation.

HIS CHILDREN JUMP

Interviewer: Do you have children who skydive?

Bob: One daughter started at 13 and has over 200 jumps. She's a very good skydiver, but she's going to college now, so she doesn't jump as much as she'd like to. My younger daughter is just starting—she's 12. She did her first tandem and will be doing more.



Bob Gates with his 12-year-old daughter, Ashley, after her first tandem skydive



Flips in freefall at 10,000 feet (3,048 m) in the air

Interviewer: Are there other disciplines?

Bob: There's free flying, where you're falling head down or feet down the whole time. It takes a lot more discipline because you fall faster, so things happen quicker. In free-flying competitions, a video person free-falls with you, taking pictures with a camera on his helmet. There's also freestyle, which is doing acrobatics in the air. It takes about 1,000 jumps in a discipline to get good at it.



Jumpers need extra oxygen when they go very high.

HOW HIGH, HOW FAST?

Interviewer: How high do you go in a plane before you jump out?

Bob: We normally try to jump as high as 13,000 feet (3,962 m). We could jump at 2,000 feet (610 m) and pull the parachute right away, but we like to fall for a while before opening the chute. That's called a **free fall**. You can't go higher than 13,000 feet because there's not enough oxygen in the air.



Free-flying friends enjoy a sunset jump.

Interviewer: How long can you free-fall if you jump from 13,000 feet?

Bob: Just a whole minute. You speed up to approximately 120 miles per hour (193 kph). A skydiver could get to over 200 miles an hour (322 kph) on his head.

Interviewer: What do you mean “on his head”?

Bob: The normal position is with your stomach facing down to the earth. “On your head” means you fall head down or feet down. You have less **wind resistance**, so you fall faster.



A family affair—Bob Gates (back), daughter Brianna (front), brother Mike (left), and sister Esther (right)

Interviewer: You mean you’re changing the formation as you’re falling?

Bob: Yes. It takes a lot of planning and a lot of practice. Teams that compete in this type of jumping do at least 1,000 jumps a year. The best known team is the Golden Knights. Some skydivers want to be competitive, but the majority just want to go up and play. When you jump from an airplane, you’re only thinking about what you’re doing, and your everyday worries go away. It’s really exciting, flying without an airplane.

Interviewer: Do people skydive and land on a ski slope with a board?

Bob: The board is not for snow, though it doesn't mean someone hasn't tried. People do all kinds of stunts in skydiving. I saw a guy land with a unicycle, then release his main chute, and ride away. The imagination can go anywhere in skydiving. There are many different **disciplines**. There are accuracy landings, where you're trying to hit a small disc. Some experts hit the disc every time.

There are also free-fall formations, in which people jump together and hold hands as they fall. Some do very large formations. You can turn different formations as you're free-falling. The team that turns the most formations after a couple of jumps is the winner.



Fun in the air with a Hula Hoop

Interviewer: How do you know when it's time to open the parachute?

Bob: Beginners start with an **altimeter** made for skydiving. It is an instrument that shows them how high they are. They read the altimeter, and at the right altitude they pull the **ripcord**. Beginners open at 3,000 feet (914 m) or higher, which gives them more time to react if something goes wrong. After a while, they learn to look down and tell when the earth is getting close enough.

An experienced skydiver also develops an internal clock, a timer, the more he jumps. He'll know when he's had enough fun.



When the ripcord is pulled, a pilot chute deploys to pull out the main canopy. The person on the left is an instructor who is making sure that the parachute deploys correctly.

Interviewer: Does it seem like a short or a long time when you're falling?

Bob: The first time you do a free fall, it seems like a short time, because everything is so new. As you get more experience, you can do a lot in those 60 seconds of free-fall time. But it never lasts long enough.



Skydivers jump from multiple airplanes to make formations. The world record is 400 skydivers in one formation.



Skysurfing is an extreme sport that combines gymnastics with surfing and skydiving.

Interviewer: Does that make you stay up longer?

Bob: Yes. It takes you twice as long to come down. Instead of a one-minute free fall, you get two minutes. I've done the board too, where you jump with a board attached to your feet.

Interviewer: Do you stand on the board as you come down?

Bob: Yes—stand up, and do flips, cartwheels, twists, and spins.

Interviewer: Kind of like the tricks kids do on their bicycles?

Bob: Yes, except that we're free-falling toward the ground.

COST

Interviewer: Is it an expensive hobby?

Bob: A skydiver spends \$1,000 to \$1,500 (U.S.) for the training course. The parachute costs between \$2,000 and \$4,000. Each season he does 50 to 100 jumps at about \$20 apiece.

TECHNIQUES

Interviewer: Are there different styles of jumping?

Bob: Yes, and serious skydivers try to get knowledge of all the different kinds of jumps. I've jumped in a **birdman suit**, which has large wings on the arms and between the legs, like a bat.



Bob Gates in his birdman suit



The "toggles" allow a skydiver to steer the canopy and land safely.

TRAINING

Interviewer: What do you have to learn before you can jump?

Bob: In six hours of training, you learn everything necessary to make that first jump as safe as possible. You learn the commands you'll hear in the airplane and how to leave the airplane. You learn the arch position for falling with the hips forward, all spread out. You learn how to check your chute. You learn how and when to use your second chute and how to steer down. You learn how to find the drop zone by using aerial photos.

You learn the “landing flare,” which means you have to know how to pull the **toggle ropes**. These are two lines, one for each hand. They are attached to the back of the chute. Pulling on them helps you control the speed and direction of your fall. You learn how to roll when you land and how to pick up your chute.

Interviewer: Do you have to repack the chute?

Bob: You learn to pack your chute, but experienced, certified **riggers** actually pack the chutes for less experienced jumpers.

Interviewer: Do you jump tandem first and then solo?

Bob: You could do a **tandem** first, which means you jump connected with an instructor. Or you could do a static line for your first jump, where your chute is opened for you. Or you can do a free fall first, where two instructors hold your harness at exit and you free fall with them. They’re there to help you stabilize and to give you hand signals. But you pull your own ripcord and steer your parachute down and land it yourself.

Skydivers wear helmets, goggles, and colorful jumpsuits for protection and style.



EQUIPMENT

Interviewer: What kind of equipment do you need?

Bob: You need two parachutes, a harness, and a container that holds the parachutes. You don’t need special shoes—I know experienced skydivers who land in bare feet. You should wear a hard helmet, goggles, and a jumpsuit, which is a one-piece suit with a zipper up the front.