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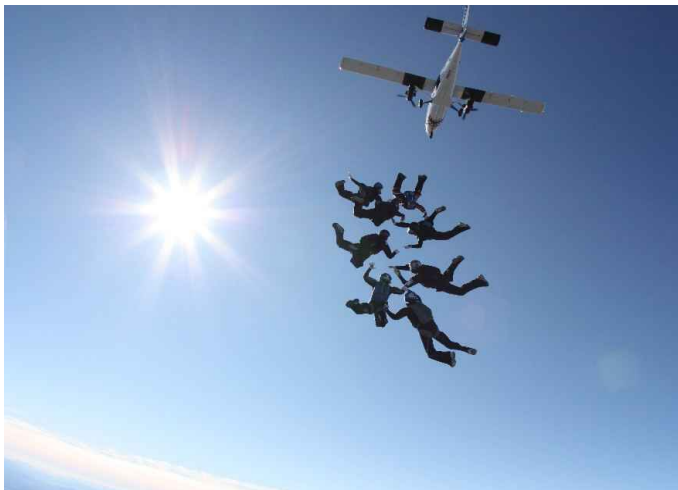
Fly Into Action

by Rebecca Besser

Ready, Set, Jump!

For skydivers, the sky isn't the limit. It's just the beginning. Thousands of people each year try the sport of skydiving. Some only jump once, while others go on to experience lifelong adventures, maneuvering and flipping through the air.

"Skydiving is not for everyone. But, if you enjoy the challenge of learning to perform in a completely new environment, are willing to make the effort to do it safely, and can overcome your fears to make the first few jumps – the rewards can be tremendous," says skydiver Bill von Novak. He has jumped around 5,500 times, is a fill-in instructor at Perris Valley Skydiving in California, and sometimes teaches a free fall course to Navy SEALs at Tac-Air.



Skydivers jumping from an airplane (photo by Bill von Novak)

First Jumps

There are three options for your first jump. However, before you can make any attempts at skydiving, a ground course on safety and equipment is required. The length and complexity of the course depends on the jump you choose.

The most popular first-jump technique is tandem. Tandem has the shortest ground course, and is the easiest to complete. You and the instructor are strapped together in a double harness (the instructor behind, with you in front). Your instructor wears the tandem rig, which contains a main and a reserve parachute. You jump out of the plane together, and the instructor takes care of opening the parachute at the appropriate altitude.

The second technique is accelerated free fall or AFF. Accelerated refers to the learning process. You jump out of the plane while being held by two instructors, one on either side. They hold onto you until you open your parachute.

The third technique is called Static line. The static line is connected to the rip cord on your parachute and to the plane. After jumping out, you will experience free fall for a second or two. Then the weight of your body will pull the line tight, opening the canopy.

For each of these three methods, an instructor is there to coach you in the air with hand signals or with a radio.

Skydiving Q & A

- How many people skydive each year?** Approximately 2 million parachute jumps occur each year.
- Who was the world's oldest skydiver?** Frank Moody, from Australia, went skydiving at 101 years of age.
- Who was the world's first parachute jumper?** André-Jacques Garnerin was probably the first parachute jumper. In 1797 (over 100 years before airplanes were invented), he jumped from a hot air balloon.



Skydivers join hands in this acrobatic maneuver (photo by Bill von Novak)

EQUIPMENT

When someone says parachute, huge round circles might come to mind. It's more common today to use a rectangle canopy called a Ram-air. When they are opened, the forward speed fills cells in the parachute with air, keeping it stable.

Skydivers also wear jump suits, helmets, and gloves to help protect other areas of their bodies. Face shields or goggles are also commonly worn. This helps with visibility, an important consideration, since you are falling toward the Earth at the rate of 120-200 mph.

If you decide to try skydiving, just remember that there are very real risks involved. For some, the risk is the draw. When I asked Bill von Novak what his favorite thing about skydiving is, he said, "The freedom. For a few minutes there is absolutely nothing holding you to a spot on the planet, or in an airplane. You're completely free to fly around the sky and to choose your own orientation, speed, and trajectory."

Define It!

Skydiving Lingo

Skydiving – the sport of jumping from an aircraft and performing acrobatic maneuvers in the air before landing by parachute.

Free fall – downward movement under the force of gravity; rapid descent without means of stopping.

Altitude – the height of an object or point in relation to sea level, or ground level.

Static Line – a line attached to a parachute pack and to a cable in an aircraft for the purpose of automatically opening the parachute after it is dropped.

Rip cord – a cord on a parachute that, when pulled, opens the parachute for descent.

Trajectory – the path described by a projectile flying or an object moving under the action of given forces.

Drop Zone – an area into which paratroopers, soldiers, or supplies are landed from aircraft for a military operation.

Vertical Wind Tunnels

Since skydiving is a risky sport, you must be eighteen years old to jump out of a plane at skydiving schools or areas called drop zones. But, there is an alternative if you are not yet of age – vertical wind tunnels.

Vertical wind tunnels simulate the feeling of free fall. They are used by professional skydivers and competitors to practice their routines or tricks. Bill von Novak says, "The wind tunnel is a great way for younger aspiring jumpers to see what free fall is like."

COMPETITIONS AND WORLD RECORDS

If you decide after your first jump or a visit to a vertical wind tunnel that skydiving is a sport you would enjoy, you might want to look into the various types of sky sports and competitions. Each sport and competition has its own set of rules, and challenges. There is also a long list of people who have set or broken records.

Bill von Novak is one of these people. His first world record was as part of a 300-person formation in Arizona in 2002. He was also one of the people that set the world records in Thailand for formations. In 2004, they made a formation of 357 people, then went back in 2006 to break that record with a formation of 400.



Skydiving maneuver (photo by Bill von Novak)

LET'S GO UNDERGROUND!

When you think of skydiving or BASE jumping, you generally think of going up in the air, or climbing to a higher altitude to jump. That is not always the case. In Mexico, there is a cave that people BASE jump into. It is the deepest hole in the world. It has an opening at ground level and is over 1,000 feet deep. The cave is called Sótano de las Golondrinas, or Pit of the Swallows. It is also sometime known as the Basement or Cellar of the Swallows. The cave gets its name from the vast number of birds that live within.

If you think that BASE jumping underground may be safer than jumping into the air from a high altitude, it's not true. It is very dangerous to jump in this cave. Jumpers must fly in a constant spiral to avoid hitting the walls.

PUTTING THE X IN X-TREME!

On August 16, 1960, a man named Joseph Kittinger did something that no one would ever dream was possible. He went up in a polyethylene plastic helium filled balloon called, *Excelsior III*. He reached an altitude of 102,800 feet. From there, he leapt out of the balloon's gondola, to free fall for 80,000 feet. He fell for four minutes and thirty-six seconds, reaching a speed of around 614 mph, before opening his parachute.

Kittinger set records that still stand today. These records include: the highest balloon ascent; the highest parachute jump; the longest free fall; and the fastest speed by a man through the atmosphere of 614 mph.

To watch videos of his amazing jump go to YouTube.com and check out:

1. Discovery Science Video: Free Fall from Space
2. Joseph Kittinger jump at 102,800 feet

FUTURE OF SKYDIVING

With new innovations of equipment and knowledge, there are endless possibilities to where the future of skydiving will lead. If you are eager to try something challenging and would love to feel the freedom of flying, skydiving might be an adventure for you. Who knows? With risk and excitement mixed together, skydiving might just change your life.

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1. Name five pieces of equipment used by skydivers.

2. What is a vertical wind tunnel?

- a. a wind storm that skydivers jump into
- b. a machine that produces wind to make people feel like they are skydiving
- c. an area below the airplane that skydivers should avoid
- d. a place where skydivers store their gear

3. Who was Joseph Kittinger?

- a. the first person to parachute from an airplane
- b. the person who organized the record 300-person skydiving formation in Arizona
- c. the person who holds the record for parachuting from the lowest altitude
- d. the person who holds the record for parachuting from the highest altitude

4. How was Joseph Kittinger's parachute jump in 1960 similar to André-Jacques Garnerin's jump in 1797?

5. When would a skydiver pull the rip cord?

- a. when he or she wants the parachute to open
- b. when the main parachute fails to open
- c. when he or she reaches the ground
- d. when he or she first puts on a parachute

6. Describe a tandem parachute jump.

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Opinion Essay

If you had the opportunity to go skydiving, would you do it?
Write a short paragraph (with at least 5 sentences) to explain
why you would or would not like to skydive.



ANSWER KEY

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1. Name five pieces of equipment used by skydivers.

1. parachute, 2. jump suit, 3. helmet,
4. face shield (or goggles), 5. gloves
Also accept: radio

2. What is a vertical wind tunnel? **b**

- a. a wind storm that skydivers jump into
- b. a machine that produces wind to make people feel like they are skydiving
- c. an area below the airplane that skydivers should avoid
- d. a place where skydivers store their gear

3. Who was Joseph Kittinger? **d**

- a. the first person to parachute from an airplane
- b. the person who organized the record 300-person skydiving formation in Arizona
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4. How was Joseph Kittinger's parachute jump in 1960 similar to André-Jacques Garnerin's jump in 1797?

They both jumped from a hot air balloon.

5. When would a skydiver pull the rip cord? **a**

- a. when he or she wants the parachute to open
- b. when the main parachute fails to open
- c. when he or she reaches the ground
- d. when he or she first puts on a parachute

6. Describe a tandem parachute jump.

In a tandem parachute jump, the parachuter is strapped to an instructor. Both people jump out of the plane together. The instructor pulls the rip cord at the appropriate altitude.

BIBLIOGRAPHY: Main Article

- Carey, Keith. A Beginners Guide to Airsports. London, WC: A&C Black, 1994
- Cefrey, Holly. X-treme Outdoor; Skysurfing. Rosen Book Works, Inc., 2003
- Gale, Leslie. Ultimate Thrill Sports; Skydiving. Ticktock Media Ltd., 2007; Gareth Stevens, Inc., 2008
- Novak, Bill von. Skydive Instructor. Perris Valley Skydiving California. E-mail Interview. Sent Thursday, May 21, 2009. Received Back, Monday, May 25, 2009.
- "Parachute." Wikipedia, the free encyclopedia. Page last modified 9 June 2009 @ 16:11. 10 June 2009. <<http://en.wikipedia.org/wiki/Parachute>><http://en.wikipedia.org/wiki/Parachute><<http://en.wikipedia.org/wiki/Parachute>>
- Ryan, Pat. Skysurfing. Mankato, Minnesota: Capstone Press, 1998
- Smith, Wendy. "Thailand '06 World Team." Catapadomania; Neale, Sarah. Pic with all jumpers names, in formation. <<http://catapedamania.com/400waynamescale.asp?factor=4>><<http://catapedamania.com/400waynamescale.asp?factor=4>>

BIBLIOGRAPHY: "Putting the X in X-Treme!"

- Hamilton, Tom. "Joseph Kittenger." Balloon Life. Westport, CT. <http://www.balloonlife.com/publications/balloon_life/9510/balloonm.htm>
- "Joseph Kittinger." Wikipedia, the free encyclopedia. Page last modified 23 May 2009 @ 12:35. 16 June 2009 <http://en.wikipedia.org/wiki/Joseph_Kittinger>
- Rumerman, Judy. U.S. Centennial of Flight Commisson. "Joseph Kittinger." <http://centennialofflight.gov/essay/Explorers_Record_Setters_and_Dardevils/Kittinger/EX31.htm>
- Willard, Keith. Ballooning. Mankato, Minnesota; Smart Apple Media 2001.
- Yoon, Joe. 18 September 2005. "Fastest Skydiver Joseph Kittinger." Aerospaceweb.org. <<http://www.aerospaceweb.org/question/aerodynamics/q0243.shtml>>

BIBLIOGRAPHY: "Let's Go Underground!"

- "Cave of Swallows." Wikipedia, the free encyclopedia. Page last modified 12 June 2009 @ 13:00. 16 June 2009. <http://en.wikipedia.org/wiki/Cave_of_Swallows>
- Duckeck, Jochen. Sótano de las Golondrinas: Cellar of the Swallows - Pit of the Swallows - The Big Hole. Show caves. <<http://www.showcaves.com/english/mx/caves/Golondrinas.html>>
- Gale, Lesley. Ultimate Thrill Sports; Skydiving. Ticktock Media Ltd., 2007; Gareth Stevens, Inc., 2008