



# How Fast Does Your Parachute Fall?

## It's slower than you think

**THE FLYING SEASON IS IN FULL SWING** and the contests abound. Semi-retirement has been great. I'm writing this from the pilot's lounge of the Arlington Municipal Airport (AWO) in Washington. In about four hours I'll be giving a group of pilots a bailout seminar.

One customer recently asked me about his rate of descent under his parachute. He was sure his parachute's rate of descent was like jumping from a height of 15-18 feet. I assured him that was not the case.

Your rate of descent is just one of the many important questions you need to ask before purchasing a parachute. The parachutes on the market today are not the issue. The issue is people today are bigger and weigh more. Your cockpit has not gotten smaller. It's your favorite fast food restaurant. For only a dollar more you can double the size of your order. I can't force you to change your eating habits, but I can explain how to determine the best parachute available for you.

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Let me explain a little about rate of descent. All manufacturers have to do a lot of drop tests before they are issued TSO certification for their product. Part of that certification process is doing drop tests to determine the rate of descent. Let me use a canopy I'm familiar with. The rate of descent drop tests on the 24-foot Preserve 1C canopy were done with a 210-pound test dummy. It was dropped from a specific altitude, and the descent is timed. Wind conditions must also be factored in. After completing the required number of drop tests it's pretty easy to figure out the rate of descent. In this case it was approximately 16.2 feet per second with a 210-pound test dummy. This equates to you jumping off an ap-

proximately 4-foot platform. Similar tests were done by other manufacturers.

Most parachutes are tested at 1.2 times what they are placarded at. For example, the parachute mentioned above is placarded at 150 KIAS and was drop-tested at 180 KIAS. Since it's rated to carry 220 pounds, it was also tested carrying 264 pounds. All certified parachutes have a considerable amount of safety built into them. That doesn't mean you should push them to the limits. Your parachute is a precision piece of equipment and is there in case it's turned into a very bad day. Staying within the guidelines specified by the manufacturers will help minimize possible injuries you might incur during a landing. Remember the alternatives are not better.

Make sure when you purchase a parachute to ask what speed it's rated at and how much weight it can carry. You need to determine the rate of descent (with your weight) of the parachute you're considering to buy. If it's a used parachute, the person you're buying it from probably doesn't know. Call your parachute rigger, the manufacturer, or me. Keep in mind that a larger parachute doesn't mean it will come down slower. Bigger does not always mean better or a slower rate of descent.

There are several other factors that play into the rate of descent picture. One is what type of material the manufacturer used in its construction. The material on all modern canopies is nylon and may look similar, but it varies. I will not get into how much cfm (cubic feet per minute) flows through the material or the weave in detail. Very simply put, the nylon is woven on looms. One direction is called warp and the other fill. For example, the warp direction may have 110 filaments (threads) of nylon and the fill direction 100. The material is often coated to meet specific requirements. The coating prevents air from flowing through the fibers. That's why some material is called lo-po (low porosity) and others may be called F-111 or Zero P. What they call it is not important. The question you need answered is how fast will my rate of descent be with my weight?

Keep in mind the above-mentioned figures are

based on a rate of descent at sea level. If you bail out at higher altitudes your descent will naturally be higher. The same applies for density altitude.

Also do not confuse what weight your parachute can carry with its maneuverability or its forward speed. Those are other considerations you need to make when purchasing a parachute.

Many of you have never taken the time to become familiar with your parachute. In my presentations I often have someone pull the rip cord on a parachute (see photo). The blur you see in the photo is the spring-loaded pilot chute leaving the container. The pilot chute will easily spring out 3-5 feet. One of the more common pilot chutes has a 30-inch spring inside of it. During the packing and closing of your parachute it's compressed to about 1-2 inches. After the excitement of pulling the rip cord wears off I explain what's inside. A few words of caution: Do not practice pulling your rip cord close to your Ming Dynasty vase.

Now that I have a lot more time on my hands I would like to meet you and your fellow pilots in person and give you a bailout seminar. **IAC**

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