WHAT ONE DZ'S ACCIDENTS SAY ABOUT US ALL

Skydive Arizona, one of the world's busiest drop zones, has tracked its fatalities, injuries and incidents for the past 20 years. The figures have recently been compiled into a comprehensive report, "Learning From the Mistakes of Others: Skydive Arizona Accident Review, 1991 to 2011." Remarkably, just plain bad luck accounted for less than 5 percent of all incidents—meaning

- **95 percent of the accidents were preventable**
- 75 percent of the skydiving fatalities did not involve any equipment malfunctions
- Visiting jumpers were slightly greater than five times more likely to die in a skydiving accident than Skydive Arizona locals. What do these numbers tell us about how to make people safer skydivers?

First, it is apparent that almost all the accidents could have been **prevented by better training.**

- Altitude awareness,
- Adequate separation at breakoff,
- Flying a pattern to manage traffic,
- Solid canopy skills and
- Clear understanding of exactly how equipment works

Should be fundamental elements of the training skydivers receive. But they often aren't. Why not?

ONE REASON MAY BE THAT MANY INSTRUCTORS ARE TRAINING NEW JUMPERS SOLELY TO THEIR HOME ENVIRONMENTS.

IN OTHER WORDS, WHEN STUDENTS JUMP AT DROP ZONES WITH LIMITED LIFT CAPACITY, VERY LIMITED CANOPY TRAFFIC AND HUGE LANDING AREAS, THEIR INSTRUCTORS MAY NOT INCLUDE A STRONG EMPHASIS ON BREAKOFF SKILLS OR TEACH NOVICES HOW TO FLY A CANOPY IN AN AREA WITH LOTS OF TRAFFIC AND FEW OUTS. BECAUSE THEIR SKILLS ARE ADEQUATE IN THEIR HOME ENVIRONMENTS, THESE JUMPERS DO NOT EVEN KNOW HOW WEAK THEIR SKILL SETS ARE UNTIL THEY COME TO A DROP ZONE WHERE THE OPPOSITE CONDITIONS PREVAIL—LOTS OF PEOPLE IN THE AIR AND A LIMITED LANDING AREA. THEY FIND THEMSELVES WITHOUT THE RIGHT TOOLS TO DEAL WITH THESE CHALLENGES, EVEN THOUGH THEY MAY HAVE HUNDREDS OF JUMPS AND HOLD D LICENSES.

"....SPIRALING DOWN IS DANGEROUS, S-TURNS IN THE PATTERN ARE DANGEROUS...."

Stress to students that a seemingly insignificant gear problem, such as a badly set grommet or a worn or too-long closing loop, can kill. A jumper should pay very close attention to his life-support system and resist complacency.

Although the above points are important, by far the number-one thing that instructors need to teach students is: Every turn you make, for any reason, increases your odds of an accident. Opening off heading is dangerous. Spiraling down is dangerous. S-turns in the pattern are dangerous. Furthermore, "the more you turn, the less you learn," since turns create a constantly changing descent rate and sight picture, making assessment of the environment a challenge.

For these reasons, instructors need to discourage jumpers from making excessive canopy maneuvers except on solo jumps. They should also pay particular attention to teaching jumpers to separate themselves under canopy using time and space. This will require many rating holders to change the way they teach canopy flight—instead of teaching skydivers to solve landing problems on final approach, they need to instruct them to do so earlier, on their entry and base legs.

By adequately training students on canopy flight, instructors can help to reduce accidents .... all over the world.....

The good news is that the information contained in the report shows us that rating holders and DZ managers can teach a few concrete things to make skydivers safer, wherever they may jump. Instructors should:

- Make sure that every jumper has a clear understanding of ***exit order and separation***, including the importance of ground speed. As an additional safety measure, instructors should teach jumpers that if they are in one of the first groups out of an airplane and are flying toward the drop zone, they need to keep a particular eye out for others up the line of flight.

- ***Teach flat-tracking skills*** and spend more time discussing breakoff procedures. Dives with a weak plan or a low likelihood of success tend to have disorderly breakoffs. Skydivers should focus on carefully planning dives that have a high chance of success and should stick to their dive plans in the air.

- Reduce unintentional low turns and pattern-altitude collisions by teaching students to fly a distinct pattern designed to ensure the jumper a clear path on final approach.

- Reduce intentional low-turn fatalities by emphasizing how dangerous these maneuvers can be, especially as jumpers downsize their canopies.

- De-emphasize the culture of downsizing. Skydivers never injure themselves because they have too much parachute overhead.

"...BY ADEQUATELY TRAINING STUDENTS ON CANOPY FLIGHT, INSTRUCTORS CAN HELP TO REDUCE ACCIDENTS .... ALL OVER THE WORLD....."

—Bryan Burke | D-8866
Safety & Training Advisor at Skydive Arizona
Eloy, Arizona