

From the Downwind Rigging Loft
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King Air Basics

On the last load of the day Sunday, 8 July, we had a scary incident. A very experienced Wingsuit Flyer left the King Air and impacted the tail suffering a compound fracture on one of his legs. He managed to deploy his canopy safely and landed (in the peas) as best he could. This incident brings to light a number of things people need to consider and be aware of.

This jumper is very experienced and very current in general, especially with his chosen discipline. The Pilot at the time is one of the most experienced, competent and knowledgeable jump pilots in the country, perhaps the world, with nearly forty years experience in the industry. The wingsuit flyer was located in the tail of the aircraft during climb to Alt. Normally he would be forward however on this load he was aft. After all other jumpers had exited he left and impacted the tail. There appears to have been a misunderstanding between pilot and jumper as to the fact he was going to exit at that time and the aircraft was not yet in its proper configuration for a wingsuit exit. As this is not intended as an incident report I am not going to go into all the specific details and will leave that up to the principals involved. However, I do want to point out a few facts.

1. With the wide variety of different disciplines available in the sport now we are seeing a tendency on the part of new jumpers to try too much too soon. This also applies to wingsuit flying. Basically if this kind of thing can happen to the person in this incident, it can most certainly happen to a less experienced jumper.
2. Communication with the pilot is key. This must be done before the A/C leaves the ground, especially in the case of a specialized discipline or higher than normal opening.
3. Proper loading of the aircraft according to exit order is essential to survival. The aircraft must be loaded opposite the exit order. Exit orders vary depending on discipline but basically go from larger to smaller groups with opening altitudes staggered, generally getting higher the later the exit number. Tracking and wingsuit flyers typically get out later or last however not always. The key is to have a plan, a competent experienced leader/organizer and communicate with the pilot and other jumpers as to what you are doing and make sure they are on the same page you are. I cannot emphasize enough that this is to be done prior to take-off, not on the way to altitude. Exit orders based on disciplines can elicit a lot of debate and I do not intend to broach that subject here.

4. Proper loading of the aircraft for CG is also essential to survival. The CG or center of gravity is generally located at the wing attachment point of most aircraft. For the a/c to fly the weight must be loaded on or forward of the cg. Too much weight aft of the cg can cause a stall and crash on take-off. This is one of the leading causes of skydiving a/c crashes over the years, overloading and too much weight aft of cg. The King Air is especially sensitive to this. Ideally, you would load the heavier people up front and the lighter ones in back. Unfortunately, that does not always cooperate with the exit order needed for the disciplines involved. The best way to work this out is to discuss it on the way to the aircraft and perhaps alter exit order accordingly within reasonable limits. Additionally, remember density altitude. On warmer days the air molecules are more active and as such atmospheric pressure is thinner. This requires more runway for a safe takeoff as there is less air pressure on the control surfaces. Loading and especially in relation to CG is all the more important on hot days.

5. Finally, seat belts. Remember, besides being required by FARs (Federal Aviation Regulations, in other words federal law) they are just common sense. When you are involved in an aborted take-off or even worse, they are there to keep you from becoming a projectile. The belts we have are not the standard lap type in a fixed seat. That would only cut you in two. The best option is to route one end through your harness, preferably away from handles. These will not necessarily keep you completely stationary during a crash or abort; it might however keep you from flying from the tail compartment into the cockpit. They are as much for your fellow jumpers protection as your own. About 15 years ago an Otter crashed on take-off with most of the occupants suffering fatal injuries. Many of these were killed from projectile injuries (camera helmets etc) and suffocation due to the people in the back being crammed up forward.

After the accident:

After the jumper landed safely but obviously hurt, EMS was called and he was attended to as best we could. Several of us did the best we could to make him comfortable and assess the extent of his injuries. As usual, a considerable effort was made to remove his gear prior to EMS' arrival. Unfortunately, in my opinion, we were far too aggressive in his movements in removing (saving) the gear.

Before I go any further, let me say that I was there and am equally as guilty. Often when one of us is hurt there is a well intentioned and very careful effort to try to remove the equipment, minimizing movement so it is not cut off by EMS. However, anyone with even rudimentary knowledge of first aid knows this could cause further damage and injury, even life threatening. In this instance, even though we had people with EMS training there and the jumpers knowledge and help in removing the gear, we really pushed the limits of common sense.

If a rig has to be cut off a jumper, the harness only need be cut. Once the harness is cut, even in one place, it needs to be replaced. This is generally expensive but at most \$500. The entire rig itself does not have to be replaced. Chances are that in comparison with what the jumper is facing, and the potential life threatening complications from excessive movement, this is a drop in the bucket. Other options might be as follows:

1. If the rig has an articulated harness (hip and or chest rings) cutting the main lift web between the hip and chest rings or cutting the leg straps would most likely not require complete harness replacement.
2. Cutting the lateral attachment to the main lift web and not the main lift web itself is a considerably smaller repair cost to a complete harness replacement. However, none of this is as important as making sure that our good intentions do not lead to a severed artery.

The matter of removing gear or not has been an area of hot debate for years in skydiving. The question of trying to remove the gear versus not moving the injured jumper is a tricky one. Gear is expensive and EMS do not always care about that, or are even all that competent (unfortunately we have had some examples of that in our area). For instance, if someone just had a bad landing and just got shaken up a bit, is that worth chopping up a rig. Conversely, in this situation, we have someone who impacted a horizontal stabilizer on exit, conducted a skydive with a compound fracture of the left femur and landed his parachute. Several complications might have developed between the time he was first hurt and help arrived. Additional movement in a well intentioned effort, no matter how minimal, can cause a life threatening situation.

Again, just my opinion,

JHL

Downwind Rigging



And as always, this newsletter is Safety Puppy approved.