

What I Learned from Landing Gear Up

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In July I had a belly landing in my ASG29 when I couldn't get the landing gear full down.



I attempted to extend the gear before entering the pattern and found that I could not get the handle all the way forward into the overcenter and locked position.

At this point I had about enough time to do a 360 while I trouble shot the problem.

Looking for the reason why, I discovered a pen had fallen (apparently out of my pants pocket which was in that area) into the slot where the handle moves back and forth. The opening is very small, so when I tried to get it out with my fingers, I just couldn't get a grip on it.



I'd witnessed an inadvertent gear-up landing which left the gear doors in the dirt behind, so I wanted to try to avoid that.

Not wanting to land gear up, and unable to get the gear down I tried to break the pen with the gear mechanism in the hopes I could get it in to the down position. This didn't work and just crushed the pen blocking the forward position of the handle. My next idea was to try to land with as much gear down as I had and to try to hold it in that position to soften the landing. This would require holding the handle down in the flare while I flew with my left hand.

What I hadn't considered was that there was no way I was going to be able to support the 800 lb glider with one hand.

The ASG29 has two usable flap settings for landing: Flaps 6 where the flaps are moderately down and so are the ailerons, and Landing where the flaps go to 45° and the ailerons go negative for a very high drag configuration. I elected to use flaps 6 for a slow soft landing.

I informed Unicom that I was landing with a faulty gear and stayed to the side of the runway to allow others to land with plenty of room to my left.

Upon touchdown, which was otherwise smooth, the gear immediately collapsed. Fortunately I did not have my arm in a position where the unyielding and aft moving gear handle was going to hurt me.

The glider came to a stop quite quickly and ground crew quickly arrived with cushions to help get the glider back up. Once we unscrewed the seat pan we were able to dislodge the pen and extend the gear, then normally position the glider back to my trailer.

One gear door was slightly damaged, the other was split nearly in half and crammed with dirt and grass. Dirt and sand sprayed everywhere up in the wheel well and into the workings of the CG towhook which is located just forward of the wheel usually obscured by the gear doors.



The belly obtained cosmetic damage that went through the gelcoat but only exposed without damaging the fiberglass structure. The transponder antenna which sits immediately behind the gear doors was untouched.

The scraped part of the glider's belly was all forward of the gear door area. Meaning that if the gear was fully up, on this glider the gear doors would probably not have sustained any damage. In the future, if presented with an issue that I cannot get the gear fully down, gear up is not a bad option.

Had I called Sky Sailing with a little more time, they may have been able to suggest just that. But by the time that advice was available I was already on final approach, and they elected not to bother me with last-minute directions.

The body damage was repaired with sanding, filler and paint, and about 6 hours of labor. The gear doors are the hard part as they are expensive and not stocked – so new ones must come from Germany – which is neither quick nor inexpensive.



Lesson overview

Avoid unnecessary objects that can possibly fall down into places they shouldn't be.

Put the gear down early – this allows time to troubleshoot or call for advice or assistance before the time crunch of the traffic pattern becomes top priority.

Land with the gear all the way down, or all the way up. The partial extension exposed my gear doors to damage which would likely not have occurred with a fully gear up landing.

There's no way to keep the glider off the ground if the gear is not fully over-center and locked in the down position.

Let others on the ground know you're having trouble. In the airline world we call it "expanding your team." There may be some useful advice that can be had obtained or they can be ready for you on arrival.

