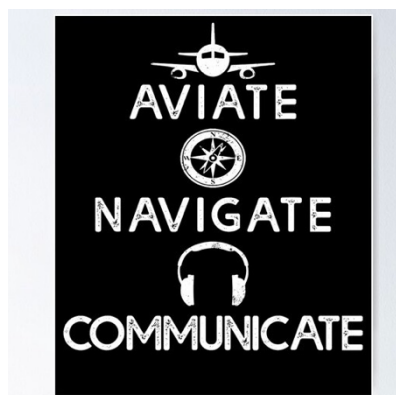


# SKYLINES

*Newsletter of the Skyline Soaring Club for December 2024*

## REMINDER

Jim Perlmutter



"Aviate, Navigate, Communicate" is a key principle in aviation that highlights the order of priorities for pilots during flight. Here's a quick summary:

**Aviate:** The primary focus is on controlling the aircraft. Pilots must manage speed, altitude, and attitude to ensure safe flight.

**Navigate:** Once control is established, the next step is to determine and maintain the correct flight path. This involves using navigation tools and charts to stay on course.

**Communicate:** After ensuring the aircraft is on the right path, pilots should communicate with air traffic control and others as needed, including reporting their position, altitude, and intentions.

Following this sequence helps pilots manage situations effectively, especially in emergencies.



## PIO LESSONS LEARNED

Chris Wuerker  
Safety Officer

These are my personal opinions for discussion purposes only and do not represent the opinions of other Skyline Soaring Club Officers, Directors or members. I am not a flight instructor, aerospace engineer or systems engineer. The official cause of the accident will be determined by the NTSB who is currently investigating.

On October 6, 2024, one of the club ASK-21 was damaged in a PIO while landing. Fortunately, the pilot was not injured. Because





the damage was 'substantial', the incident was reported to the NTSB and FAA who classified it as an 'accident'. While the NTSB continues its investigation, the club completed its own. The following is an initial lessons learned based on our investigation.

PIO's (pilot induced oscillations) come in many forms. They can be pitch oscillations, bank oscillations, yaw oscillations or combinations of the above. But this discussion will focus on the most dangerous, pitch oscillations which contact the ground. Fortunately, our club gliders are inherently stable, meaning that the glider itself wants to normalize control inputs. So when PIO's do occur, it's almost always pilot error.

I believe what happened in the recent PIO accident was that the glider touched down too fast and with too much descent causing a hard landing which bounced back into the air. The bounce may have been due to a change in the angle-of-attack either from inertia (landing with the tail wheel high allowing it to fall with the hard landing) or from control input as well as from elasticity in the tire and wings. In any case, the aircraft had enough airspeed to fly. The second bounce likely came from excessive pitch down without enough altitude to recover resulting in landing, again, with too much airspeed and descent. This cycle continued until the airspeed was too slow to fly.

Hard landings may occur when the flare is too high resulting in a rapid decent onto the ground but if the airspeed is low, the aircraft will not become airborne (the 'pancake' landing). Of course, it is possible to land a glider at high speed, but you'll have to 'fly' while in contact with the ground until the airspeed is dissipated. This is very difficult as even a small gust will want to lift the aircraft and

the controls will be sensitive. This is why it is best to dissipate the airspeed while still a foot or two off the ground. In the ASK-21, we bleed off the airspeed, controlling the descent with the spoilers, until we are in a tail down attitude which hopefully occurs just as we are touching down. With the tailwheel down, even if we have a hard landing the tailwheel prevents an increase in the angle-of-attack. The PW-5, however, should not be landed on its tailwheel. But neither should it land in a nose-down attitude. It needs to land in a slightly nose high attitude where the tail is still off the ground. This sight picture is demonstrated during the initial PW-5 checkout and should be reviewed frequently. For me, the landing attitude in the PW-5 puts the horizon halfway between the glare shield and the bottom of the yaw string but it will be different for each pilot. Land nose down and you're likely to land too fast and with too much descent which could lead to a bounce and possibly a PIO. Land nose high and you're going to hit the tailwheel first. Be careful not to subconsciously transfer the landing technique of the PW-5 to the ASK-21. Again, landing with the tailwheel high is appropriate for the PW-5 but not for the ASK-21. Landing the ASK with the tailwheel high is inviting a bounce and possibly a PIO. If in doubt, ask for the ground crew to show you the landing attitude for your aircraft once your seat is adjusted and you're strapped in. Consider rehearsing your landing plan on your preflight and make it part of your landing checklist (e.g., 'flare to tailwheel down attitude' for the ASK-21 or 'flare to touch down attitude' for the PW-5).

Take the time to learn from each flight. Reinforce what went right and learn from what went wrong. If you have a hard landing, take the time to understand why. If you were slow, did you flare too high and drop onto the runway? If you were fast, did you land with your nose low? Did you have the perfect landing and then a gust picked you up? How could you have better compensated for the gust? If you have a PIO, take the time to discuss with an instructor. Take the time to understand what you are doing wrong and then practice with an instructor. For PIO's, prevention is the solution.

John Noss, Chief Flight Instructor, adds “There are seven pages in Chapter 8 of the Glider Flying Handbook that discuss various aspects of PIO, including causes and remedies. This is worth reviewing for everyone. Our training syllabus has links to these and a few others excellent references as well as two videos”.



### **PLEASE FLY THE SINGLE-SEATERS**

Stephanie Zilhora

As all of you know, Skyline Soaring Club is currently down to a single two-seat glider, and this situation will unfortunately persist for a while until repairs can be completed. In the interim, the Board of Directors is strongly suggesting that post-solo club members make use of our single-seat gliders. As a reminder, the PW-5 can be flown by post-solo students after passing the written test and doing a cockpit checkout with an instructor. I encourage Duty Officers to regularly ensure that the PW-5 is preflighted and available on the ramp for use by club members.

The club is fortunate enough to now have two single-seat Disci, and they are both currently being stored 85% assembled--all you have to do is pull them out and put on the horizontal stabilizer! The Disci are available for use by rated glider pilot club members who have completed the written test, a check flight with an instructor in the ASK-21, and a cockpit checkout. You also need to have had at

least six PIC flights in a glider in the past 90 days preceding the check flight.

Of course, if you're taking up a friend or another club member, or something else prohibits you from flying one of the club single-seat gliders, the ASK-21 is still available...but I am asking that it not fly with an empty back seat if there are club single-seat gliders on the ground.





**Skyline Soaring Club, Inc.**  
is a private,  
501(c7)  
non-profit

organization, dedicated to the enjoyment and promotion of the sport of soaring. SSC is based at the Front Royal-Warren County, Va. Airport and is an affiliate club of the Soaring Society of America. For information about the club go to [www.skylinesoaring.org](http://www.skylinesoaring.org)

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