

Saturday 9/23/23 PA-28RT-201 N2442N Incident

I was one of a group of pilots supporting the EAA Young Eagle flights that were being conducted out of the Wings of Hope hangar which located on the North side of Spirit of St Louis airport (KSUS).

I got to the airport around 8:00 AM, preflighted the Arrow and taxied over to Wings of Hope. There was a pilot briefing, of all the Young Eagle pilots, and I took my first group of "Young Eagles" for a flight at ~ 9:15. Our route of flight was a loop around Wentzville and then return. Mt first flight landed about 9:45.

My 2nd flight left the hangar with 3 "Young Eagles" around 10:15. Same route as my first flight. At the end of the flight, I entered the left hand downwind for 26R, lowered the gear (verifying 3 green), lowered first notch of flaps when abeam the numbers, turned base, selected the 2nd notch of flaps, then turned final and verified 3 green lights. Reduced power and then as I was flaring brought the power to idle. The landing was normal. Upon touchdown, I received my first indication of an issue. At first, I thought I had ballooned, because instead of a solid feeling with the runway surface, I felt that we were still flying. As I corrected for the right wing being low, I then realized that the right wing continued to drop until it was scraping the runway. The plane continued pulling to the right and I had no steering control. We went off into the grass completely and spun slowly to the right. We ended up on a heading of about 30 degrees (we pirouetted 130 degrees to the right). When we came to a stop, I turned off the Master, I opened the door, and had the kids get out first, I raised the flaps so I could get past the raised handle and exited the plane and awaited assistance from the airport police.

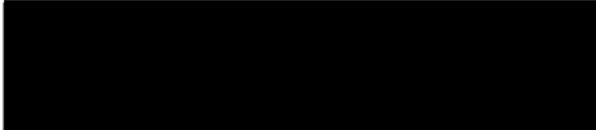
After we got out, I realized the nose gear has also collapsed. I thought it had collapsed from the side loads, going through the grass, but upon examining the prop, saw that the prop had been scrapping on the runway so the nose gear collapsed about the same time as the right MLG. The airplane was up on the left MLG. I was surprised how much of a side load the Left MLG had withstood by seeing grass embedded under the hubcap.

The airframe structure was surprising in good shape, except for the right-wing leading edge that struck a landing light during the excursion. When the wrecker crane raised the plane, both the right MLG and nose wheel were pulled down manually and locked in place. The Arrow was then pulled by a tug back to our hangar.

During the entire flight I was engaging the "Auto Extend Override" latch (which turns the system off). Explanation: The Arrow has an Auto-Extend System which normally keeps the landing gear from retracting until going faster than 95 kts and/or automatically lowers the gear when slowing below 105 kts. I choose to turn the override system off for the following reasons:

- On take-off, with Best Angle between 70 – 77 kts, and Best Rate between 76 – 87 kts, the only way to raise the gear and fly those speeds is to manually turn off the Auto-Extend system.

- In level flight in the pattern, if the engine quits and you want to fly at Best Glide speed of 79 kts, the Auto Extend System will put down the gear which cuts your glide range by 50%. So I keep it off.
- On landing, in prep for a go-around, I want to climb at Best Angle with the gear up, so I need to turn Auto Extend off.
- Even with the Override System turned off, there is a Warning Light and Gear Horn that go off if the Gear is not extended and power if reduced below 14" MP.



9/26/23

Michael Piccirilli

