Safety Corner -- K-21 Canopy Hazard

The rear canopy on the K-21 opens straight up, making for a pretty big and interesting air brake if it opens inflight. If the rear canopy does open inflight, typically the plexglas shatters and the canopy frame then may or may not depart the aircraft. If the canopy frame detaches and hits the tail, a fatal accident could easily result.

If the rear canopy is closed and locked you should never encounter such an event. Key words here are <u>**CLOSED AND LOCKED</u>**. It is oh-too-easy though to close the rear canopy and not lock it, either due to a passenger not knowing how to fully engage the locks or through a more likely scenario where a pilot forgets to lock the rear canopy when going on a solo flight with an unoccupied rear cockpit.</u>

The good news is that the K-21 canopy system is designed to prevent you from locking the front canopy if the rear canopy is not closed and locked. While the design is sound, the plastic interlock that does the magic has been known to fail which will allow the front canopy to be closed and locked when the rear canopy is closed but not locked. Not good. This is not a theoretical situation; as John Murray can relate, he just repaired a K-21 from a glider club in the region where an unlocked rear canopy came up during flight. The total damage was about \$10,000. (Not a typo.) In this incident the interlocks were broken or missing which enabled the front cockpit pilot to close and lock his canopy with the rear canopy still unlocked. The results were predictable, embarrassing, and expensive.

How can we prevent this from happening at CCSC? Simple. Before flying a K-21, leave the rear canopy open and then lower and try to lock the front canopy. (Don't use excessive force, otherwise you can break perfectly good interlocks.) *If you can lock the front canopy with the rear canopy open, the interlocks are broken (or missing) and the aircraft must be grounded until they can be repaired.*

Crew chiefs: Ensure your crews perform the interlock check prior to the first flight of the day.

<u>AND</u>...just as importantly...prior to each and every launch, visually ensure the rear cockpit canopy locks are fully engaged.

Pilots: As part of your preflight, with *gentle pressure* on the front canopy locks confirm that you cannot lock the front canopy with the rear canopy open. If you are flying solo, close and lock the canopy ensuring that the rear cockpit locks are fully engaged. See if you can lift the canopy with the locks engaged by putting your hand through the window vent. If you have a passenger, ask them to ensure the canopy is locked by pushing up on the canopy after they have locked it. And finally...when you close your canopy for takeoff in the front cockpit, if you cannot fully seat the front canopy locks, stop and investigate. This is a really, really big deal.

See the pictures below for how the interlocks work:





