

We Americans have an inherent tendency to resist being told what to do, that we're doing it wrong, or that we can do it better. While some aircraft owners / pilots may disagree with these thoughts and suggestions, because they have "never had a problem", hopefully, some will consider these ideas and take greater care in the operation of our vintage aircraft fleet.

Let's start with an explanation for our friends not familiar with the subject of "HAND PROPPING" airplanes. Many...if not most engines used in small 2 seat training and sport type airplanes before the mid 1940s were made without "self starting" capabilities. It has been common and accepted practice to start these engines employing a careful process of turning propeller by hand, typically having a "qualified" person in the plane to operate the controls, and a "qualified" person outside to turn the propeller as needed, and very clear communication between them. In those days, there were lots of folks hanging out at a local airport and one could usually get that second "qualified" person to help with a start. (You've likely noticed some emphasis on this "QUALIFIED" thing ) In more recent years, many local airports have become rather sparsely inhabited, and these days the owner / pilot of one of these airplanes often finds himself or herself needing to do this starting process all alone. This most certainly can be, and is done very safely and successfully every day. This does however require some extra care and forethought!

In my 60 years of being immersed in the world of vintage and homebuilt light airplanes, I've often heard stories of various incidents involving hand propping. There often seemed to be 2 fairly common scenarios....One would be the pilot who reaches in the plane and turns on the ignition switch, adjusts the throttle, goes up front, and "props" the plane, which isn't tied to anything and has no chocks around the wheels. The engine promptly starts right up, but, WOW, that throttle is open lots more than our pilot thought. Our hero gets out of the way of the prop, only to see his cute little aeroplane start to run away without him. He grabs a wing tip or lift strut and pulls back on it as his little darling plane goes by, and now at this point, a quarter ton or so of angry airplane is doing donuts on the ramp and our pilot is right in the middle of the madness. The end result here is never favorable..... perhaps some injury, or worse, and pretty much guaranteed serious damage to this aircraft, as well as possible damage to nearby buildings, other planes, cars, or anything / anyone else in the area.

The other rather common scenario has been the occasion in which a pilot brings a friend, neighbor, co worker, etc. out to the airport for a nice plane ride. "AHHH, Now we have someone to help start the plane"! We have our passenger sit in the plane and we instruct them briefly on how to hold the brakes, operate the ignition switch, and close the throttle when the engine starts. Remember that word "QUALIFIED"?

So up front we go... Perhaps we prime the engine with a few prop rotations.... We shout to our friend "BRAKES and CONTACT" They turn the switch to "BOTH". We pull the prop through a couple cylinders and as expected, it starts up and chugs along at a nice moderate speed. OH, but our passenger had instructions to close the throttle after the engine started.... They're thinking this must mean "PUSH the KNOB FORWARD!", like the throttle knob on their 1950 Chevy or their lawnmower....And so they do just that! ( I'm not making this stuff up...It really happens!) Now we have a loose airplane on the ramp at full power, and a totally panicked passenger with no clue of how to fix this mess. Again, we have all the possible horrible outcomes along with a helpless passenger inside. We like to think that our friends would have quick thinking skills and simply pull the throttle back, but don't count on it! What we need to consider is that our airplanes, and most aspects of aviation are totally alien to non aviators, and they can't be expected to understand or perform tasks without appropriate training to become "QUALIFIED".

So how do we make this hand propping / starting business as safe as possible? Here's a few tips!

**#1 TIE THE AIRPLANE** to something that won't move easily if you're doing a start alone.

The aircraft should be tied to a non moveable object: Ramp tie down point, building structure, heavy vehicle, etc. A rope, ( possibly cable or chain) should be used that can carry the load of your plane pulling on it at full throttle. Attach to the most suitable "strong" point on your type aircraft, typically tailwheel / tail spring. Consult a mechanic or type club. Be certain that rope is taut when starting. Ropes and airframes can fail due to a sudden jolting force if rope is left loose. When traveling, take some rope with you or use tie down ropes.

**#2 USE WHEEL CHOCKS** large enough to keep the aircraft from moving at a high power setting.

Chocks made from 4X4 lumber sawn diagonally are common. A chunk of 2X4 is not adequate! Chocks alone may not hold an aircraft at high power, and some types may nose over if tail is not secured. Don't trust those old parking brakes systems for this. They usually don't hold much!

**#3 MANAGE THE THROTTLE** to be certain it is set to the proper position AT ALL TIMES. Check and Recheck!

Some aircraft start well at idle, while others require having throttle partly open to start. Learn what works for yours. Some owners have devised ways to keep the throttle in proper position during start ( Bungee cords, dowel rods, etc.) Owners have reported throttles "opened on their own"! This can happen as result of lack of friction in throttle control or backfiring.

**#4 DON'T TRUST THAT SWITCH** to be OFF when it says OFF!

Always handle a prop as if the switch is ON. Aircraft engines are made to RUN and given the opportunity, RUN THEY WILL! Don't think your engine won't start because you turn it slowly. Good impulse type magnetos produce a powerful spark AT ANY SPEED. With impulse magnetos, there's no need to swing the prop with all your might... Swing it at a moderate rate and keep your balance. Early "Non Impulse", or malfunctioning " Impulse" magnetos can cause prop "Kick - Back", so don't wrap fingers around the prop! Unlike our cars, if aircraft ignition switch wiring breaks, the engine becomes "HOT" and WILL start and run until deprived of fuel. If an engine won't shut down with the switch, and has no mixture / idle cut off, it can be shut down by closing the main fuel valve.

**#5 CONTROL THE SITUATION** to the extent that you are satisfied with the safety and security of people and aircraft.

Use the 2 person method to start your aircraft when possible...Assuming both persons are "QUALIFIED" Don't put non aviators in a position of operating controls for which they're not "QUALIFIED" Don't allow "just anybody" to prop your plane...again, verify that they're "QUALIFIED" During difficult starts, and ensuing frustration, embarrassment, and perhaps anger,... STOP, COOL OFF, and take the time to go back and verify that all the stuff mentioned above has been accomplished. And remember that this is supposed to be FUN!!!

There are lots of possible scenarios in which hand propping our small planes could go wrong if we should get a bit too complacent. While it may seem a bit silly to make such a big production out of something as seemingly simple as starting our sweet little vintage airplane, but it has to be a sickening feeling when our sweet little vintage airplane suddenly becomes a raging, out of control monster of destruction, and there's not a thing we can do about it! In the past several months prior to this writing, I have become aware of several propping incidents in which airplanes have been damaged or destroyed, pilots have been injured, and in a recent incident a friend lost his life. If enough of these incidents should occur, someone in our government could determine that yet another goofy regulation is necessary. We don't need that! As the fleet of vintage light planes is being passed to younger generations, it seems that some of the valuable lessons learned in the early days have not been passed down along with the logs and history books.

If you are a new owner of one of these aircraft, or intend to be an owner, please take the time to learn about hand propping safely. FAA publication H-8083-3 has some information on hand propping. There are an assortment of online posts and articles covering the topic as well. Also, our friends in the EAA Vintage hangar area offer excellent hand propping seminars nearly every day during AirVenture at Oshkosh. This is a great opportunity to actually see it being done, and perhaps get some hands on experience.