Piper Comanche N5799P Best Practices & Tips

Introduction

This is a quick run-down of helpful things about this aircraft. This includes things the previous owner shared with me, my own observations, and things I've read (mostly from the POH and the International Comanche Society). This is not intended as a substitute for reading the POH and obtaining training and checkout specific to this aircraft from a qualified CFI.

This is a fast, fun plane to fly! I hope you'll enjoy it as much as I do. It is an older aircraft, so some things are different or even quirky. I try to cover those things here. I have made an effort to cover the more important things first, and the less important things later.

Please email or text me if you have questions or think of things I should document. Neal@Morgan-Systems.com, 858-353-4181.

Landing Gear

Gear - Manual Extension

DO NOT PERFORM MANUAL GEAR EXTENSION UNLESS YOU ARE EXPERIENCING A REAL EMERGENCY. *I'm breaking my own rule about not typing in all capitals because I want extra emphasis!* Piper Comanche's require an A&P/IA to swing the gear, test and align it, and certify it for return to service after a manual gear extension. This will cost time and money and cause frustration. Don't do it unless you have no other choice.

Here's how you manually extend the landing gear. First, establish slow flight, full flaps, under 87 kts. Next, ensure the gear switch is in the center position. Open the access panel on the floor between the pilot and co-pilot seats. Fully extend the lever to disengage the gear motor. Next, extend the telescoping gear extension lever so you will have mechanical advantage. Finally, push the lever all the way back toward the dash as far as it will go (back to the position it was in when you took off). These instructions are also placarded on the bottom of the access panel door.

Important note, those last steps may require a great deal of muscle. If you are having a hard time getting the gear down you may find slowing down more helps. (The airflow over the nose gear is working against you, plus you must overcome the resistance of several bungee cords that are part of the gear system).

Another important note: once on the ground you must keep pressure on the manual gear lever to prevent the gear from retracting. If you have someone in the co-pilot seat, have them push against the lever with their foot. Taxi more slowly than normal to be safe.

Gear - After Takeoff

The gear selector switch has a center/neutral position. This can be confusing when putting the gear down, as you may think you have lowered the gear when really you only moved the switch one notch. I

have taken the practice of switching the gear to that neutral position after take-off and gear retraction. Once I see the white light is lit, I move the switch to the center notch.

Gear - Approach to Landing

The required placard on the dash says: "Ldg gear dn-locked - 150 mph" but we have an aircraft whose airspeed indicator is in knots! 150 mph = 130 knots. However, the ICS issued POH says 108 knots is recommended. I assume that is the recommendation to lessen the stress on the gear and gear motor. I try to follow this recommendation. This means planning descent and slowdown 30 nm or so from landing to leave sufficient time for a gradual let down. When the speed is on the edge of the white arc, I lower the gear. One benefit of this is it slows the plane further and I don't have to worry about being inside the white arc when I want the first notch of flaps.

When lowering the gear, remember the center/neutral position mentioned above. Be sure you are in the bottom position. The gear takes 8 seconds to fully extend. Look for the green light. I try to follow the habit of saying my gumps check on downwind and again on final.

The gear up/down lights are pretty noticeable during daytime operations but can be difficult to see when the nav lights are on. If in doubt, momentarily extinguish the nav lights to confirm the gear down light is illuminated.

Where's the brakes?

This old girl has a hand brake, not differential toe brakes like we all know. When I first got her, I thought that would be something I would want to modernize. By the second flight I was quite comfortable using the hand brake and stopped caring about the missing toe brakes. If you're worrying, this is what you need to know. When you need to brake, you will reach out, grab the handle and pull on it, and the airplane will slow down. Since there is no differential braking, you can't turn very tight. Give yourself a little extra room for turns and you'll be fine. The engine is willing to idle as low as 500 rpm, so throttle back, (remember to lean) and grab that handle when you need to brake!

To set the parking brake, pull the brake handle first, then grab the parking brake "T" handle and pull it out until it stops, then release the hand brake. To release the parking brake: push the "T" handle all the way in. Note that the hand brake becomes ineffective when the parking brake handle is extended. If you have the parking brake engaged and the plane starts creeping, push the T handle all the way in as you grab the hand brake and you'll be fine.

Starting

This aircraft has a starter button next to the key switch. The switch only controls the mags. As a result, it is possible to crank the engine without the mags turned on. (In case you wonder, it won't start in that configuration!) If you crank and don't get any indication of start, check that you have the key in the switch and that it is rotated to the right to the "both" setting.

When cold, prime 6 to 8 times before cranking. The notch for pulling the primer out is about a ¼ inch turn past where the primer appears ready to release, when rotating clockwise. Crack the throttle ¼ inch and it should start within 3-4 blades, and you'll look like a pro to anyone looking!

Hot start requires no prime, throttle open ½ inch. Be ready to throttle back when it starts, usually 10 or less blades. Sometimes it helps to move the throttle full open, then full close, then back to ½ inch while cranking for a good hot start.

Lean, lean, lean. Really. Lean!

This engine is prone to fouling the plugs when running rich. For ground operations, lean to the point the engine stumbles then enrich slightly.

If you don't, you will likely encounter concerns during the run up: that the decrease in RPM on mag check is too much or the difference between drops for left and right mags is too great. If that happens, stop the run up, lean the mixture as described above, throttle up to 1800 rpm and burn off the excess/heat the plugs for 30 seconds then try the mag check again.

I have developed a habit on take-off of retracting the gear, engaging the prop, throttling back slightly, slight leaning, then cruise climbing at 100 kts all in a steady combination before turning crosswind.

Oil

In short: fill to 7 ½ quarts, unless going on a long cross country.

I've been experimenting, trying to determine the best oil level. The POH and the dipstick indicate the capacity to be 12 quarts. The POH says "the operating level is normally kept a few quarts below maximum to reduce oil consumption." True that. The POH also says normal oil usage is 0.25 to 0.35 quarts an hour. When I added a quart at 8 on the dipstick it seemed it would go through a quart an hour! The oil seems to just be blowing out the crank case breather vent. My current practice is to add a quart at 6.5, particularly if I am going for a local flight. I might fill to 8 or 8.5 if going on a longer cross country. If you're interested in experimenting and sharing your results send me a text or an email and let me know what you find.

There is a screw on filler/adapter to use when adding oil. It is stored in a bag in the box with supplies in the baggage compartment. It should be self-explanatory, but just in case: one side screws on to the bottle of oil and the other side screws into the oil filler tube. There is a valve in the middle which deters the oil from flowing. Make sure it is turned so it is perpendicular to the oil flow to be in the off position while you screw the adapter into the oil filler tube. The threads aren't great, so be patient.

Fuel

The plane has a pretty nice digital fuel gauge. Unfortunately, the senders in the tanks are old and need some work. They are correct when full and when empty. Somewhere under half a tank they appear to me to read low. I recently flew until the left tank read under 4 gallons. Since it is a 30 gallon tank, I should have been able

to put 26 gallons in. Instead, it took 16. Lesson here is, stick the tanks and use the calibration graph to really know what you have left until I get the senders reworked.

The International Comanche Society (ICS) suggests keeping the fuel tanks full between use to slow down the deterioration of the fuel bladder/membranes and to lessen the possibility of condensation accumulating. I'm still trying to make up my mind on this one. (Not to mention, the need for gas gives me an excuse to fly to where gas is cheaper!) Follow your own opinion here for now.

When filling the tanks, note the fill collar sticks down into the tanks beneath the level of the fuel when it is full. That means, to really fill up the tank, you have to be willing to fill to about 3/8 of an inch from the top of the collar, where the drain hole is. That felt worrisome to me the first few times I did it, but it works. It's probably worth slowing down the fuel flow as you get close to prevent splashing.

Unlike Cherokee's and 172's, this aircraft has only one place to check for fuel contamination: the strainer behind the small door located aft of the nose gear. To be thorough here, this is a multi-step process. First, confirm the fuel tank selector valve is set to either right or left tank (and not off). Then get under the plane in front of the wing and open the strainer door by loosening the thumbscrew. (Note there is a mat in the baggage compartment for comfort and to keep your clothing clean. There is also a fuel tester in the storage box there.) Drain some fuel. Resist the urge to hold your fuel tester upright as the gas is going to follow the tilt of the valve and you will get wet! Inspect the sample, pour it back into the tank, climb in the plane and switch the fuel valve to the other tank and repeat the testing. Once complete, be sure you secured the fuel strainer and filler doors.

The good news is the fuel filler collar, cap, and the doors that cover them seem to keep rain and dew out nicely (unlike Cherokees). I have not seen any water or contaminants in my fuel samples after rain. I have seen water accumulate in the tanks once due to condensation.

Transponder

I've gotten spoiled in other planes with newer transponders that come on automatically and switch to "alt" on their own. This one doesn't. Make sure you turn it on when you turn the avionics master on after starting the engine, as it takes a little while to warm up. Be sure to select "alt" in the run up or you may find yourself having the "I'm not receiving altitude" conversation with ATC after lifting off.

Door

The door requires some attention/effort to get closed securely. The key is to get the bottom catch secure before moving to the top and middle. From the outside, push on the door at the handle firmly from 6 to 10 inches before closed; a gentle but firm not-quite slam. From the inside, do the same holding on to the leather strap. You'll know the latch is secure if you push on the door and it doesn't open. (*Note, this can be difficult if the inflatable gasket is still inflated. See below).

Once the bottom latch is secure, continue by latching the top. This latch is easy enough as it hooks into its closure and pulls the top shut. The middle latch goes last and sometimes requires a little inboard pull while moving the slide aft.

I find the door easiest to latch from the inside when sitting in the left seat. That middle latch can feel nearly impossible to move if you are at the wrong angle (for instance, when sitting in the right seat, or when standing in front of the plane reaching over the wing.) It seems easiest to move when in the pilot seat or standing on the wing facing the door.

The aircraft is equipped with an inflatable door gasket, which can be used to reduce wind noise for the right seat passenger. There is an unlabeled switch on the panel adjacent to the door which controls the pressure release valve for the gasket. The pressure is retained in the up position and released in the down position. The door can be difficult to latch when the gasket is inflated. Hanging by the co-pilot right knee is the inflation bulb. Squeezing the bulb inflates the gasket. It also gives the CFI or co-pilot something to do!

Seats

The pilot and co-pilot seats are generally left in the full aft position and that setting seems to work best for most pilots. If you release the seat latch once in the plane, it can be difficult to get the seat re-positioned so that it catches in one of the stops again. If there are two people in the front, the one next to you can see the stops in the track and assist by pushing on the back of the seat, but it requires coordination! You would be best not to release the seat at all; but if you do, it may be easiest to get out of the plane and adjust the seat without any weight on it.

The pilot seat requires extra effort to stay in any of the stops other than the aft hole. The trick here is to hold the handle while sliding the seat aft, leaning right and watching the holes until positioned in the desired stop. Then, reach down and help the pin seat in the hole by pressing on it with a finger. Otherwise, you may think the seat is securely in the stop until the first time you press a rudder pedal and feel the seat move!

On the pilot seat there is a second handle that controls seat height. This appears to be a spring loaded thing that will raise the seat when there is no weight on it, and that releases the hold when you pull the handle with weight on it. I like it lower so I don't bump my head on the ceiling during turbulence! Experiment with it and you should be able to find your preferred position.

Comms and ICS

We notice when the pilot is transmitting, the pilot's volume for others on the intercom is low or muted altogether.

I have noted the pilot side headphone jack (or my headset) is sometimes not making a great connection. It seems this is related to the playback side, not the transmit side. This has resulted once or twice in making radio calls then missing the response. For now, I pay attention to whether I hear myself in the intercom. If not, jiggle the headset plug a bit until that clears up. I will add this to my list of things to improve when the plane goes to the avionics shop later this year.

Power, Circuit Breakers

I have had issues twice with circuit breakers and what appears to be a high resistance problem after rain. We will be working to find and correct this problem.

In one case, the voltage declined over time, and on closer look I discovered the alternator wasn't charging. It turns out the circuit breaker on the bottom labeled "gen" had popped. Because the row of breakers on the bottom is not visible, and because there are two sizes of breakers there, it is not easy to tell when one has tripped. It was only by pushing in on the right breaker that I discovered it was popped. Once reset, it continued to pop when I had all the lights on. (I concluded the battery was low enough by then that it's draw for re-charge plus the draw of the lights was too much). I turned off the landing lights and flew for a while and the alternator charged the battery enough to solve the problem.

In a second case, the master breaker on the far left on the bottom popped. This was reset and no further problems were observed.

If you're having power issues check the breakers on that bottom row, pressing each in, paying particular attention to the master and gen breakers.

Autopilot

Here's a simple and easy way to get up to speed using the autopilot. First, make sure you remembered to turn the turn and slip coordinator on with the green switch labeled "Turn and Bank." This is the switch between the right landing light and the strobe lights. Second, move the test switch to the right of the autopilot to the test position. Leave things like that until you are off the ground. When ready to put it to use, move the test switch to the "ON" position (center). You'll see the green "RDY" light on the autopilot display. Press the "on/off" button on the autopilot. The STB indicator illuminates. The autopilot is now in wing leveler mode. You may use the rotary switch to engage a left or right bank, and then center it again to level the wings.

To switch to heading mode, move the heading bug in the DG to the desired course, then press the rotary switch like a button once. You should see the STB light go off and the HDG light illuminate. The A/P now has control of the ailerons and will follow the heading bug.

To engage altitude hold, pressing the "alt" button when at the desired altitude. This one is a little squishy and sometimes non responsive. If I don't get lights when I press it, I pull out on the button a bit and try again, gently. The ALT indicator will illuminate. If you engage alt hold when climbing or descending through the desired altitude, the plane will seem to search a bit before zeroing in on your desired altitude.

Disengaging the A/P can be accomplished by pressing the ON/OFF button and confirming all indicator lights are off and only the green RDY light is on, flipping the test switch to the right to "off", and/or pulling the autopilot breaker. There are times I have put it back into STB instead of turning it off, and then felt it working against me as I tried to steer. Turning it off solves that.

Baggage Compartment, Supplies

The baggage compartment lock can be opened by pressing in on the door with your free hand while turning the key. I find pressing inward on the door with my left thumb to the left of the lock while turning the key with my right hand works well. When locking the door, a slight pressure leftward on the key while turning seems to help.

There is a storage box with supplies in the baggage area. Inside are oil, oil filler tool, paper towels, shop rags, microfiber towels, cleaning wipes for your hands, cleaning wipes for the plane, windshield cleaner, ratcheting straps, chocks, a fuel tester with screwdriver and a dip stick. Use what you need when renting the plane. Please don't use the paper towels on the windows – use the microfiber towels to prevent scratching. When you use a quart of oil, return the empty to the box so I can track usage. There is also a mat for use when crawling under the plane.

Shutdown

The POH suggests 15 or 20 seconds at 1800 rpm prior to shutdown, to burn off excess deposits. It might help keep the engine running better, longer. So, after stopping at the tie down, throttle up to 1800 rpm until you see 1100 degrees on the EGT, then throttle back to < 1000 rpm and let it idle until you're back under 900 degrees. This shouldn't take more than a minute or so.

Securing After Flight

After your flight, put the plane back in space #10, and secure it with chocks and chains. Log your time. Be sure to pick up your headset and gear, throw away any trash, and close the storm window and all the vents to keep moisture out. Put the cowl plugs, pitot cover, and tail cone covers on. If you hit some bugs and want to clean the windshield there is a special can of Plexiglas cleaner and a microfiber cloths in a zip lock bag in the box in the baggage compartment you can use. After putting those away, be sure to lock the cockpit and baggage compartment doors. Finally, put the cockpit cover on. Note there is a pocket on the pilot side of the cover for the outside air temperature sensor. Use that to orient the cover. The straps have latches on both sides. I find leaving them latched on the right side and throwing them under toward the left helps keep the wind from blowing the cover off as I walk to the left side.

That's it! I hope you enjoy flying Comanche 5799P as much as I do!