



Oh, Chute! What Took Me So Long?

Earning the Light Sport Powered Parachute Privilege

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"I want you to bring us down to four feet above this empty pasture. Using your throttle and some flare, keep us at that altitude." After several minutes a smile was plastered across my face as we whizzed along at 30 mph in straight and level flight varying occasionally to throttle-up to cross over a fence or line of saplings.

This air-toboggan ride with Craig McPherson in Blum, TX began two years earlier at AirVenture. I am an annual visitor to the event in Oshkosh, WI, but seldom had I visited the ultralight area. I was with friends and they suggested we take a look. While there, I met Morris Yoder. He is one of the first sport pilot examiners appointed by the FAA and a well known instruc-

tor. After spending time with Morris, I decided that I wanted to take powered parachute (PPC) lessons. I started as a balloon pilot then moved to airplanes, gliders and seaplanes. Given my previous training and experience, I qualified to take transitional training to earn the new privilege as a sport pilot.

As the flying season passed, Morris was unable to fit me into his training schedule which was limited due to the harvest at his farm. He did give me the name of Roy Beisswenger at Easy Flight in Greenville, IL, an instructor and another one of the original sport pilot examiners. Roy is one of the great aviation enthusiast-advocates. He spends his time as an aviation radio show host and producer, aviation

magazine publisher, flight school instructor/proprietor and powered parachute sales agent. Roy explained that he offered two training curriculums. One is designed for pilots transitioning to powered parachutes and the other is designed for zero time pilots pursuing their first rating. The length of each course is dependent upon weather with the former scheduled for six days and the latter twelve days. While the transition course was perfect for me, a slot would not be available for seven months. Roy offered an idea provided I would commit to a quid pro quo agreement. He would give me the name of another great instructor near my home in central Texas if I would become a sport pilot certified flight instructor some day.

Several days later I was on the telephone with Larry Garrett. Larry is a very high-time pilot with 46 years as a pilot and flight instructor. He flies a gamut of aircraft from hot-air balloons to the large DC-3 and Boeing 727. I shared my flying experience with Larry and he agreed to train me. He also mentioned that he had another CFI within a moderate drive that could work with me when we approached the sport pilot proficiency check-ride. I live in a small airpark community and Larry arranged to bring his Powrachute brand Airwolf powered parachute to my place for the training.

Our hope was to get in lots of flying and ground school over several days. Mother Nature refused to agree to our schedule and five days turned into

twelve as we worked around windy conditions almost every morning and evening. Those are normally the best times of day for flying these aircraft. When flying conditions were lacking, we found a comfortable place to work on terra firma. My home office sits off the back porch away from the distractions of dogs, cooking, telephones and the like. Larry and I holed-up there for the duration of ground school, flight planning, weather forecasting and testing.



The Airwolf has undergone a complete preflight and the canopy is laid out behind the cart inverted and stacked. (John Craparo)

The Airwolf is a stout aircraft constructed from chrome molybdenum steel tubing and aircraft grade connectors and hardware. The tricycle landing gear has dual struts cushioned by shock absorbers where they attach to the wheels and cart body. That's four shock absorbers per wheel! The nose wheel is welded to an attachment plate and ground steering is accomplished by a stick that is positioned between the pilot's legs. For the purpose of moving or repositioning the PPC when the engine is not running, the same stick swings

up toward the nose of the aircraft like the handle on a child's coaster wagon allowing it to be pulled and pushed.

The traditional instrument panel found in an airplane is replaced by an Engine Information System (EIS) from Grand Rapids Technologies. Its two-line high contrast LCD provides engine status including oil temperature and pressure, cylinder temperatures (CHT), exhaust gas temperatures (EGT) and fuel level. Flight data is provided via a tachometer, altimeter, vertical speed indicator and flight timer. The appearance of each screen is pilot configurable and large page buttons allow the pilot to scroll through information as needed. Below the EIS, dual switches are provided for magneto operation along with a keyed ignition. There is also a switch for instrument power, another for the auxiliary fuel pump, and warning lights activated by parameters set in the EIS.

The well padded tandem seating is sturdy and comfortable. A four-point military style harness provides security and peace of mind given the completely open cockpit. The rear seat is situated over the aircraft's center of gravity in a stadium arrangement (i.e. it is higher than the front seat) which gives the rear occupant a clear view

of the instrument panel and great visibility outside the PPC. The 10 gallon fuel tank is located under the rear seat. With the rear seat passenger and fuel over the the CG, weight and balance considerations are simplified.

The power plant is the four cylinder 100 hp Rotax 912. The same model installed in a majority of light sport airplanes. There is no mixture control or carburetor heat so choke and throttle make up the pilot engine interface. The powered parachute is a two control aircraft – the throt-

tle controls ascent and descent and steering lines connected between right and left foot-bars and the trailing edge of the canopy control banking. The canopy, also called the wing, is a 13 cell 550 square foot parachute airfoil manufactured by Performance Designs. This is a beautifully made parachute. On one of our flights we experienced some turbulence and the airfoil remained responsive while cushioning the ride.

While the FAR's do not require minimum training hours for powered pilots transitioning to the PPC, Larry ensured I was fully qualified on my way to earning the privilege. Light winds of 5 to 10 knots many mornings extended our time together be-



John is ready to take the Airwolf up for a flight. When flying the PPC solo, it is flown from the front seat only. (Larry Garrett)

cause we could not fly every day. We used this time for ground school and familiarization with the requirements for becoming a sport pilot certified flight instructor (S-CFI) in powered parachutes. My future plans include teaching PPC to zero time students and transitioning pilots. The comprehensive classroom and practical training lasted twelve days. Aside from extra training afforded by the weather, we took a half day road trip from Georgetown, Texas to rural Blum just south of Ft. Worth where I worked with Craig McPherson preparing for the proficiency check-ride.

Larry proved to be a gifted teacher in the air and on the ground. His voice stays in your head long after the instruction is over. We thoroughly covered all the oral and practical elements tested in the FAA Practical Test Standards (PTS) for powered parachutes. In addition, we cracked several books including the 2012 FAR/ AIM. The Powered Parachute Flying Handbook was our main textbook for ground school. I read it cover-to-cover before the start of training. We also watched Starting Powered Parachuting from Adventure Productions. Additional time with our heads in an FAA Sectional Chart supported the learning and sparked conversation about the aircraft, regulations and flying experiences. We spent 35 hours on ground school and somewhere south of 10 hours in the air.

We flew from a 2700' by 75' turf runway for all of the instruction at

Georgetown. It is oriented to the north and south which follows the prevailing winds in this part of the country. At the northeast end of the airstrip, an adjacent 10 acre field provided us with some crosswind capability when needed. In Blum, Craig owns a farm and the field we used covered over 200 acres allowing takeoff and landings in any direction. Being sparsely populated, we were able to safely fly at any altitude.

It was chilly most days we flew and so we wore flight-suits over our clothes. This provided warmth, but it also helped to minimize the possibility of losing keys, handkerchiefs and other items that could fly into the propeller behind us. We also donned head and face protection. Our Sport Link helmets featured integrated headsets and intercom/radio connectivity. Their smoked, full polycarbonate, face shields also made the morning and evening sun a non-issue and being non-polarized, the LCD display on the EIS remained sharp and readable.

Like airplanes, PPC instruction and testing includes required maneuvers which are the foundation to all flying. For instance standard turns, straight and level flight, ascents and descents, turns around a point, s-turns over a road and rectangular course are included in dual instruction. The use of clearing turns and checklists is also stressed. Training diverges from other forms of flying mainly during preflight, takeoff, landing and shut down.

We started by completing a com-

prehensive preflight of the PPC. The aircraft is made up of two major structures: the cart and the wing (aka – the canopy, parachute or airfoil). The preflight is done in two parts starting with the cart. We examined the overall appearance of the cart looking for issues with symmetry, foreign matter and loose or bent parts. Moving to a micro view we went over all structures including tubing, brackets, nuts and bolts. In the cockpit we checked for secure seat attachments, paperwork and placards, harnesses, flight

controls and instruments. A thorough check of the landing gear included the tires, shocks and nose gear attachment point. When we got to the engine, we insured that all safety wires were in place. This insured moving parts like the throttle cables were properly connected while also confirming that air filters and the like could not come loose and fly into the propeller. Fuel and oil level were checked visually and the propeller was looked over carefully.

“OK, taxi the aircraft down to the runway.” Larry wanted me to get used to operating the PPC on the ground. Unlike an airplane where steering is done with the feet, steering a PPC is done with the left hand manipulating a

stick that controls the nose-wheel. The stick is fitted with a bicycle-type hand brake activator. The right hand controls the throttle. The airplane-type throttle is used to increase and decrease engine RPM by pushing and pulling, respectively.

Once in position on the field, Larry taught me how to remove the canopy bag from its storage position on the cart. All the rigging or suspension lines remain attached to the cart during storage. I walked the parachute out behind the cart which I parked at the end of the runway fac-



After a successful three hour practical exam, Larry congratulates John after endorsing his logbook and completing FAA form 8710-11. (Jane Garrett)

ing into the wind (actually there was no wind at 6:45 am). Sliding the canopy out of its bag, I insured that it was not flipped or twisted. The rigging lines are stored in zippered sleeves to protect them. I unzipped the line sleeves (aka – socks) and stored them and the canopy bag in secure saddle pouches on each side of the cart. It is essential that loose objects cannot be allowed to fly from the cart through the propeller spinning at the rear of the aircraft.

The canopy was laid out behind the PPC using the inverted method. The leading edge of the canopy is arranged so that it faces away from the cart. This exposes the underside of the canopy skyward. This makes it easy to see the rigging and steering

lines as they extend from their riser attach points on the cart to their proper positions on the canopy. At this point tangles, twists and line-overs are easily recognized and corrected. A line-over occurs when one or more rigging line passes over the top of the canopy. While laying out the canopy, the second part of the preflight occurs as the entire structure and the rigging can be checked for the aforementioned problems and for physical damage including tears, debris, dirt and broken lines. We combined two methods for laying out the wing. After the inverted method, we added the stack or accordion method. This is a continuation of the inverted method in which we pull the cart forward. As it is pulled forward several feet, the rigging lines will become taught and the canopy will accordion as the leading and trailing edge become closer together. This method allows a better view of the rigging lines and their condition. It also decreases the surface area of the canopy in contact with the ground. During the takeoff roll the canopy will inflate before it has a chance to drag on the ground which can abrade the parachute material and lines. Finally, to keep the canopy from catching wind and lifting off the ground now or during engine startup, the cell openings along the leading edge, which inflate the airfoil, are tucked under the canopy. At this point the rigging is double checked to insure it cannot come in contact with the engine or propeller upon startup.

The steering lines have also been pulled away from the cart and canopy at a 45° angle to insure they cannot be drawn into the propeller.

Several days later, Larry asked me to turn my back to the PPC after the canopy was laid out during preflight. When I turned back he asked me to identify what was wrong. He simulated a problem in which the entire parachute was twisted. Even though the parachute was still laid out in what looked like the proper inverted configuration, every rigging line was twisted around itself. This is a dangerous and non-airworthy condition. I was able to identify the problem by looking at the red steering lines on the end extending from the cart. They were twisted around the white rigging lines. Actually all the lines were twisted in the same direction, but the red one stood out and allowed me to visually trace the direction of the twist. Before starting my training, I thought it would be very difficult to identify and untwist a canopy. It is actually pretty simple to do and Larry walked me through the process. First we identified the direction of the twisted steering line on the left side of the cart. I then took the steering line in hand and slid my fingers along it to its parachute attachment point. I then gathered a handful of material at that attach point and walked it back to the cart. Without releasing the material, I flung it and the rest of the canopy through the rigging bundle opposite the direction of the twist. The process was repeated on

the other side and the twist was resolved. It is important to remember that the rigging lines are never detached from the canopy or the cart; therefore, twists and tangles are always simple puzzles to solve rather than random combinations of start and end points that are impossible to sort out.

After getting into the PPC and completing a passenger safety briefing, we buckled our harnesses, adjusted our communications equipment, secured our helmets and prepared to takeoff. The pilot sits in the front seat and the passenger is in the back. From the back, Larry had a clear view of the EIS, access to a second throttle and steering bars, and an engine kill switch. We checked the airport traffic pattern and the wind indicator before starting the takeoff roll. The procedure is to throttle up until the canopy rises above the cart. Once it is up, throttle is reduced so the pilot can visually ensure the canopy has symmetrically risen over the cart, the lines are not tangled and there are no line-overs. Larry and I covered procedures for either correcting problems or shutting down at this point. Once assured, throttle is moved to full power and the PPC is steered with the steering bars down the runway. Rotation occurs in

about 200' and the climb is steeper than in an airplane. The Airwolf's 100 hp engine creates P-factor and torque which is countered by pressing the craft's left steering bar. The manufacturer also rigs the parachute so that the turn tendency is dampened. The steering bars are controlled by the pilot's feet. The red steering lines are attached to left and right steering bars.

Our rate of climb was 1000' per minute. Larry suggested we level off at 500' AGL. During climb-out the EIS indicated 5800 RPM and 4600 RPM seemed to be about right for level flight. The first thing I noticed about PPC

flight is how slow the aircraft cruises along. This allows for leisurely touring and viewing that is not possible in an airplane. I liken it to flying a hot air balloon that you can steer. At this point we practiced level 360° turns to the left and right, turns around a point, S-turns over a road, and lots of takeoffs and landings. We practiced at or above the standards called out in the PTS. In addition, we practiced landing with the engine at reduced power to simulate emergency landings.

Landings in the PPC are straight forward as we used a traffic pattern altitude of 300' AGL most of the time.



From across the airpark, John can be seen on final approach at the end of his proficiency check-ride. (Frank Craparo)



After touching down and confirming that the canopy is stable, John continues to kite the canopy for 300 feet. (Carol Landry)

While we followed standard traffic pattern procedures, we entered the pattern and flew the downwind and base turns much closer to the runway. Throttling back to about 3400 RPM provided a descent rate of 300' per minute. After carefully checking the runway wind indicator, we lined up for a landing straight into the wind. Only slight steering bar input was needed and at about ten feet above the runway Larry instructed me to gradually push both steering bars full forward. This flares the aircraft and we touched down very lightly on the main landing gear. The flare is released immediately upon touchdown and steering with the steering bars resumes.

By allowing the aircraft to roll along without a further reduction of power, the canopy is kited. It stays inflated above the cart allowing, if stable, for a touch and go or even taxing off the active field or runway. Kiting is a required maneuver on the practical test. If crosswind is an issue, the parachute can begin to oscillate and it is probably better to reduce throttle to idle and shut off both magnetos. The canopy should gently fall behind the cart away from the hot engine and propeller. If it begins to fall to one side or over the cart, the pilot can grasp the red steering lines with both hands and pull them across his or her body. This helps force the chute down behind the cart. Procedures for bringing the canopy down when oscillating or in other abnormal attitudes were thoroughly discussed and demonstrated by Larry.

Larry felt it was time for another CFI to work with me and hopefully sign me off for the proficiency check-ride. My air-toboggan cruise took place on Craig McPherson's farm which doubles as his PPC and Gyroplane training center. Craig helped me refine my flying technique by flying rectangular courses over a fenced pasture. He combined this maneuver with figure-eight patterns formed by flying to the diagonal corners of the pasture. This forced me to balance turn entry and exit with the application of throttle and steering while contending with light afternoon winds. My turns and timing became much more precise. We ended our flying session practicing engine-off landings and some altitude and landing accuracy drills. After an hour long debriefing which included a review of common PPC pilot errors, Craig signed me off to take the sport pilot proficiency exam.

The next morning I successfully completed Larry's 2.5 hour oral and 30 minute check-ride to earn my sport pilot powered parachute privilege. Two weeks after completing my training, I decided to purchase a factory built S-LSA Powrachte Pegasus. Its design is nearly identical to the Airwolf. The power plant is the two-stroke Rotax 582 engine rated at 65 hp. My plan is to use this aircraft for flight instruction once I complete my SP-CFI. Using the sport pilot credential as a flight instructor transforms what some see as merely a recreational rating into an income producing opportunity.