

Laws (FAR 103 & sectional charts), weather (online resources), operating within the ultralight/aviation community, finding locations & speaking with land owners, aerodynamics, prep for kiting/simulator/maneuvers.

Equipment Basics: wing size & beginner design, EN certification, standard paragliders vs reflex, visibility (color), if used - inspection to check hours of UV/abrasion/porosity/line length, engine weight/power/geometry (evaluating thrust vs torque/weight, harness & connection types: low/high/weight shift, cage/netting designs), common engine/harness/propeller/throttle/component styles/brands, part availability/support, oil & gas mix, loudness. Choosing if/which wheels, freeflight/kiting harnesses, reserves, flotation, comms, helmet, clothing, wind socks, camera gear, GPS, variometer, etc.

Wing: parts (risers, connection loops, brakes, lines, maillons, trims, cells, speed bar), packing/unpacking, rosetting, untangling lines, pre-kiting (build wall without tilt, rotate to down side), hooking in, forward & reverse inflations in harness without oscillation or frontal collapse, inflations w/ engine-off on your back, taxi with running engine. Handling ranges of wind speed, managing cross wind control, steering around obstacles. Understanding how brake use, body & wing movements relative to wind work together. Helmet & glove use, line burns & catch hazards. Handling high winds/gusts. Checking brake length. Getting pushed & towed up.

Engine: starting, throttle control, leaning back into thrust while walking upright, full flight routine in simulator with comms & verbal/visual commands. Assembly & inspection, hang angle, harness adjustments, motor run-in, preflight of machine/suspension/wing, test flight. Maintenance - carb tuning, spark plug inspection, torque specs, common adjustments & part replacements. Prop contact injuries most common!

Weather - avoid mid day thermals (fly first/last 2-3 hours), no heavy winds/gusts, no dangerous thermal signs (cumulus clouds, soaring birds, shifting winds, devils), benign winds aloft, no strong wind sheer/gradient, no rain or nearby storms, no fog, good density altitude, check actual current conditions, use a wind dummy.

Location - LARGE ENOUGH AREA to launch & climb/turn over/past obstacles in the direction of torque, & to clear obstacles when landing. Runnable terrain. No water, electric wire, rotor (big obstacle), ground or air traffic dangers. No TFRs. Pattern if at airport. Sunrise/sunset time. Water fatalities most common!

Preflight - machine fully assembled, all screws, wires, attachments, cage netting and spars tight, proper redrive tension, enough *properly mixed* fuel, (reserve parachute pins & flotation secure, radio & strobe check), loose items stowed, clothing/eyewear/weather protection secured, clear lines w/ A's on top, pre-kite wing level into wind (rows straight & untangled), no damage to wing or any hardware, wing set up forward or reverse directly into wind, cells pointing up, no line-overs at wing edges, carb primed, throttle not stuck, engine harnessed on back before starting, harness fully buckled (leg straps!), helmet strapped, hookin (dart, gate locked, road straight, trims even, brakes clear), "clear prop", run up engine, check idle not set too high or low, belt not slipping, survey nearby air traffic & ground activity to avoid, DOUBLE CHECK SUSPENSION CONNECTIONS & wing layout, thumbs up between leg & risers then check A's, or switchable hands in reverse & check turn direction (lines on top - turn toward that shoulder).

Launch - arms at 10 & 2 cross - never in front, torpedo run, arms rise during inflation, CHECK SURGE (release A's, pull brakes at 11-12 o'clock - more wind, pull harder), POSTURE (run upright), HANDS UP, taxi wing squarely overhead, more thrust (run run), accelerate only, do NOT slow down, IF uncontrolled oscillation or frontal - ABORT/STOP/KILL, otherwise - more more, run run, do NOT jump into seat or stop churning feet below 20' (till above trees) BOUNCE - recontact ground & run/kick repeatedly, COMMIT to climb - once airborne do NOT release thrust (NO low surge), HANDS UP (full air speed), do NOT turn hard against torque, inspect wing & lines - carabiners locked, no cravats/catches/twists/kinks, FLY THE PATTERN to climb above 300', throttle to level flight. Get in seat (STOW BRAKE!). In an emergency, LAND INTO WIND if safely possible.

During Flight - HANDS UP, BRAKE TO SHOULDER, CONTROL PROGRESSIVELY - use only *small/gradual/even* movements on brakes/throttle ('1234'), don't ever jerk or release abruptly, don't ever pull brake deeply enough to stall or spin the wing - BRAKES TO BUTT IN AIR IS DEADLY! (hands up on risers if you get tense), HANDS UP & REDUCE THROTTLE slowly if the wing rolls/pitches/yaws/oscillates unexpectedly (letting the wing gain full speed & correct itself is better than over-correcting with improper inputs), generally maintain at least 300' altitude, ALWAYS HAVE AN LZ into wind reachable in case of engine failure (know your glide & climb rates), more power is required downwind - don't get anywhere near ground downwind, do NOT fixate on obstacles - PICK HEADINGS & FLY TOWARD THEM, look ahead - don't get boxed in, keep lots of clear air space around you & simply steer away from (or thrust over) oncoming obstacles, PLAN where you want to go & observe with foresight - you can never stop moving in the air!, hold a turn to stop oscillations, learn to ACTIVELY FLY THE WING - maintain straight & even flight by steering the wing above your head with enough moving air speed & all lines pressurized - CHECK SURGE (MORE BRAKE, ADD POWER) CHECK LIFT (LESS BRAKE, REDUCE POWER), crab to adjust ground track up/cross/down wind, turns induce dive - weight shift/add power to level them then hands up to get back to full air speed, stay ABOVE & behind wake of other craft, clear turns around other pilots, turn to be seen by other craft, in case of collapse - let wing recover automatically or weight shift/steer/clear, in case of a locked-in spiral - outside brake or D's to bleed off speed gradually, never throw reserve unless in a completely unrecoverable situation (wing cascading completely out of control (diving beneath you) & crash imminent) toss reserve aggressively into clear air, be prepared for parachutal landing (knees together & bent). HANDS UP, BRAKE SHOULDER, CONTROL PROGRESSIVELY, AVOID OBSTACLES, FLY HIGH.

Landing - pick a site INTO WIND, clear obstacles & electrical wires (straight lines on ground & space around buildings), fly the pattern & descend to final, line up & STOP turning, get out of seat, if you're oscillating or set up short/long - go around, kill engine 50-150', put 1 foot in front of the other, pressure to shoulder at 8', flair hard to butt at the last moment - no higher than 1'-3', RUN on landing, turn & run backward, drop the wing. Later, you can approach with the engine on, fly through sink if needed, & foot drag with increasing brake & thrust into a near stall.