

GOOD OPERATING TECHNIQUES FOR LANDING AND TAKE OFF AT OFF-AIRPORT SITES

PURPOSE: To highlight the necessity of pilot proficiency and skill required while operating in Off Airport environment. The scope of this document is to create an awareness of potential hazards that might be encountered with operating your aircraft at an "Off Airport" site. By no means is this document meant to replace instruction by a qualified flight instructor.

READ FROM AIR:

High Level: Circle the area from different directions to determine the best possible site in the vicinity. Check the wind direction and strength using pools of water, drift of the plane, branches, grass, dust, etc. Observe the landing approach and departure zone for obstructions such as trees or high terrain.

Medium Level: Make a pass in both directions from either side of the runway to check for obstructions and runway length. Check for size of rocks, location of touchdown area, and alignment of roll-out to landmarks, to have a good sight picture to be used on final approach.

Low Level: Make a pass to check for cuts in gravel, rocks, dips, bumps, etc., which are not seen from above. It is important to be at an angle to the runway, not above it. Certain light conditions can make a bad site seem good. Check and double check any area not used before, or locations that have had high water since the last landing.

Effective Runway Chart: To determine the useful runway length use the selected ground speed's FPS (feet per second) on chart below multiplied by the time in seconds elapsed from the start to the end of intended landing site. In **Planning your required take off distance, consider a 50% safety margin;** i.e., if performance for the situation requires a take off distance of 400 feet to clear obstacles, add 200 feet for a safety margin ($400 \times 1.5 = 600$).

Speed in MPH	FPS	Speed in Knots	FPS
50	73	50	84
60	88	60	101
70	102	70	118
80	117	80	135
90	132	90	152
100	146	100	168

Approach: Maintain a normal approach speed and no more than climb flaps until established on the final approach. Do not cut the final short. Make the approach long enough to capture the landing zone site picture, use a short field approach. Align the approach to the runway, add full flaps, and slow to 1.3 V_{so}.

Landing: Maintain safe flight speed all of the way to the touchdown. Evaluate your approach and departure path before you commit to landing; insure that you have a safe escape path in case you need to make a missed approach.

If in doubt, Go-Around.

Touchdown: Touch down one aircraft length beyond the threshold. Reduce all power at the time the wheels touch the ground.

Roll-out: Steer to avoid obstructions, use minimal braking to prevent rock damage to the tail surfaces, and stop in a straight line when possible. Maintain aircraft directional control throughout the roll-out.

On the Ground:

Preparing the Site After Landing: Check the length by stepping off the usable area. Remove any obstructions, branches, or large rocks from the runway and turn areas. Fill in holes and level high spots if

possible. Mark the obstructions that are not movable with natural materials of dissimilar color. Mark thresholds with branches or marks on the ground.

Turning: Make all turns with a minimum of power after proceeding forward. Never turn from a stopped position. It takes too much power, and propeller damage can occur.

Unloading and Loading: Unload the plane after stopping on roll-out. Do not taxi a loaded plane in loose gravel. Load the plane at the takeoff point. Do not load and then taxi into position.

Take-Off: Use the short or soft field techniques as listed in the aircraft flight manual. Climb straight ahead when possible using the best angle of climb until all obstacles are cleared, then continue as normal. Calculate your aircraft performance; remember **Hot - High - Humid, Density Altitude Affects Aircraft and Engine Performance; i.e. at 3,000 feet on a standard day the engine performance is only about 85% of rated power.**

Conclusion: The decision to make an off-airport landing or takeoff is that of the pilot. All conditions must be right. If the wind, load, or runway condition is not correct, then the attempt must be put off. If landing, look for another site, or come back with a smaller load. If taking off, reduce the load, wait for the wind to change, or work to improve the runway. Evaluate your physical and mental condition to determine if you are too tired to make the best decisions at that time, or handle an emergency situation should it arise. Safety of personnel and the preservation of the aircraft is of prime importance, not getting the job done. It can be put off until tomorrow.

Proficiency: If you have not flown the aircraft to be used in an off airport operation within the current season, take the time to fly with a qualified Flight Instructor to gain proficiency in off airport take off and landing techniques. Then get some practice at spot landings and short field takeoffs using a measured distance, preferably on a strip you are familiar with that has room for miscalculations.

If you have any questions regarding this information, or you would like learn more about the Aviation Safety, click here <http://www.alaska.faa.gov/Double/DoubleSafety.htm> . If you would like to talk with a Fairbanks FSDO inspector, dial 907-474-0276, or our toll free number within Alaska, 1-800-294-5119.

Remember that Prior Planning + Proficiency = Safe Flight
