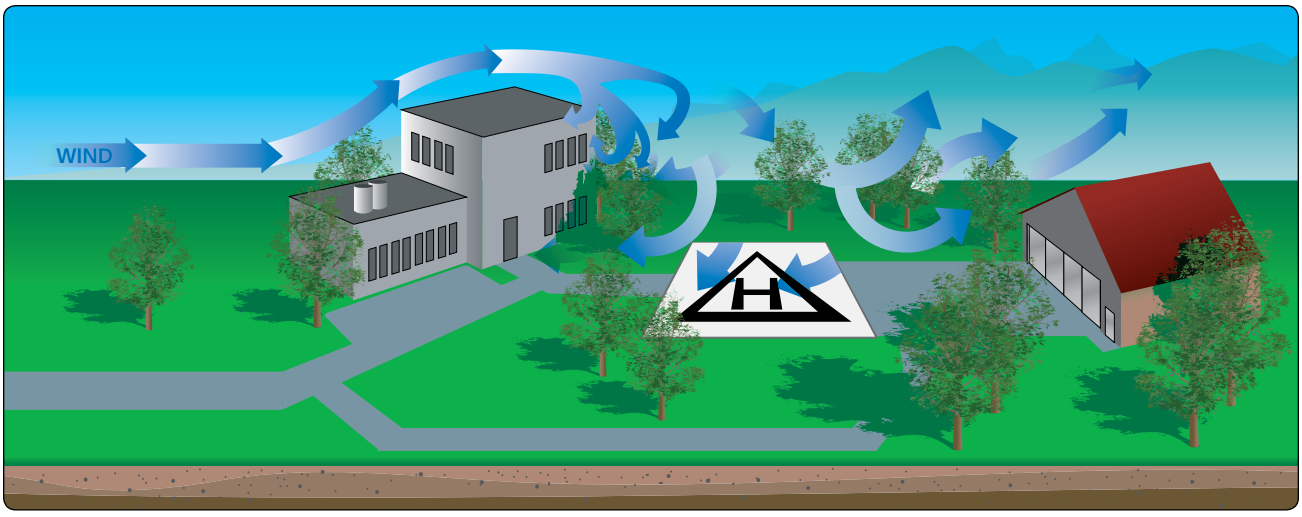



**Figure 10-8.** *If the wind velocity is 10 knots or greater, expect updrafts on the windward side and downdrafts on the lee side of obstacles. Plan the approach with these factors in mind, but be ready to alter plans if the wind speed or direction changes.*

## Approach

A high reconnaissance should be completed before initiating the confined area approach. Start the approach phase using the wind and speed to the best possible advantage. Keep in mind areas suitable for forced landing. It may be necessary to choose a crosswind approach that is over an open area, then one directly into the wind that is over trees. If these conditions exist, consider the possibility of making the initial phase of the approach crosswind over the open area and then turning into the wind for the final portion of the approach.

Always operate the helicopter as close to its normal capabilities as possible, taking into consideration the situation at hand. In all confined area operations, with the exception of a pinnacle operation (see next section, Takeoff), the angle of descent should be no steeper than necessary to clear any barrier with the tail rotor in the approach path and still land on the selected spot. The angle of climb on takeoff should be normal, or not steeper than necessary to clear any barrier. Clearing a barrier by a few feet and maintaining normal operating rpm, with perhaps a reserve of power, is better than clearing a barrier by a wide margin but with a dangerously low rpm and no power reserve.

Always make the landing to a specific point and not to some general area. This point should be located well forward, away from the approach end of the area. The more confined the area is, the more essential it is that the helicopter land precisely at a definite point. Keep this point in sight during the entire final approach.

When flying a helicopter near obstacles, always consider the tail rotor. A safe angle of descent over barriers must be established to ensure tail rotor clearance of all obstructions. After coming to a hover, avoid turning the tail into obstructions.

## Takeoff

A confined area takeoff is considered an altitude over airspeed maneuver where altitude gain is more important to airspeed gain. Before takeoff, make a reconnaissance from the ground or cockpit to determine the type of takeoff to be performed, to determine the point from which the takeoff should be initiated to ensure the maximum amount of available area, and finally, how to maneuver the helicopter best from the landing point to the proposed takeoff position.

If wind conditions and available area permit, the helicopter should be brought to a hover, turned around, and hovered forward from the landing position to the takeoff position. Under certain conditions, sideward flight to the takeoff position may be preferred, but rearward flight may be necessary, stopping often while moving to check on the location of obstacles relative to the tail rotor.

When planning the takeoff, consider the direction of the wind, obstructions, and forced landing areas. To help fly up and over an obstacle, form an imaginary line from a point on the leading edge of the helicopter to the highest obstacle to be cleared. Fly this line of ascent with enough power to clear the obstacle by a safe distance. After clearing the obstacle, maintain the power setting and accelerate to the normal climb speed. Then, reduce power to the normal climb power setting.

## Common Errors

1. Failure to perform, or improper performance of, a high or low reconnaissance.
2. Approach angle that is too steep or too shallow for the existing conditions.
3. Failing to maintain proper rpm.