

COMMON ERRORS

1. Failing to maintain proper r.p.m. during the entire approach.
2. Improper use of collective in maintaining the selected angle of descent.
3. Failing to make antitorque pedal corrections to compensate for collective pitch changes during the approach.
4. Slowing airspeed excessively in order to remain on the proper angle of descent.
5. Inability to determine when effective translational lift is lost.
6. Failing to arrive at hovering altitude and attitude, and zero groundspeed almost simultaneously.
7. Low r.p.m. in transition to the hover at the end of the approach.
8. Using too much aft cyclic close to the surface, which may result in the tail rotor striking the surface.

SHALLOW APPROACH AND RUNNING/ROLL-ON LANDING

Use a shallow approach and running landing when a high-density altitude or a high gross weight condition, or some combination thereof, is such that a normal or steep approach cannot be made because of insufficient power to hover. [Figure 10-5] To compensate for this lack of power, a shallow approach and running landing makes use of translational lift until surface contact is made. If flying a wheeled helicopter, you can also use a roll-on landing to minimize the effect of downwash. The glide angle for a shallow approach is approximately 5° . Since the helicopter will be sliding or rolling to a stop during this maneuver, the landing area must be smooth and long enough to accomplish this task.

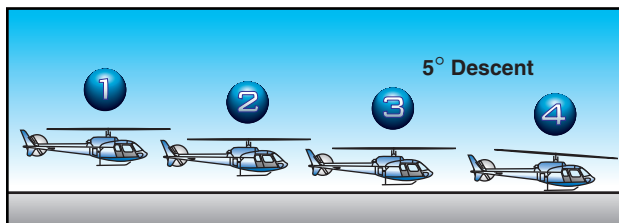


Figure 10-5. Shallow approach and running landing.

TECHNIQUE

A shallow approach is initiated in the same manner as the normal approach except that a shallower angle of descent is maintained. The power reduction to initiate the desired angle of descent is less than that for a normal approach since the angle of descent is less (position 1).

As you lower the collective, maintain heading with proper antitorque pedal pressure, and r.p.m. with the throttle. Maintain approach airspeed until the apparent rate of closure appears to be increasing. Then, begin to slow the helicopter with aft cyclic (position 2).

As in normal and steep approaches, the primary control for the angle and rate of descent is the collective, while the cyclic primarily controls the groundspeed. However, there must be a coordination of all the controls for the maneuver to be accomplished successfully. The helicopter should arrive at the point of touchdown at or slightly above effective translational lift. Since translational lift diminishes rapidly at slow airspeeds, the deceleration must be smoothly coordinated, at the same time keeping enough lift to prevent the helicopter from settling abruptly.

Just prior to touchdown, place the helicopter in a level attitude with the cyclic, and maintain heading with the antitorque pedals. Use the cyclic to keep the heading and ground track identical (position 3). Allow the helicopter to descend gently to the surface in a straight-and-level attitude, cushioning the landing with the collective. After surface contact, move the cyclic slightly forward to ensure clearance between the tailboom and the rotor disc. You should also use the cyclic to maintain the surface track. (position 4). You normally hold the collective stationary until the helicopter stops; however, if you want more braking action, you can lower the collective slightly. Keep in mind that due to the increased ground friction when you lower the collective, the helicopter's nose might pitch forward. Exercise caution not to correct this pitching movement with aft cyclic since this movement could result in the rotor making contact with the tailboom. During the landing, maintain normal r.p.m. with the throttle and directional control with the antitorque pedals.

For wheeled helicopters, use the same technique except after landing, lower the collective, neutralize the controls, and apply the brakes, as necessary, to slow the helicopter. Do not use aft cyclic when bringing the helicopter to a stop.

COMMON ERRORS

1. Assuming excessive nose-high attitude to slow the helicopter near the surface.
2. Insufficient collective and throttle to cushion landing.
3. Failing to add proper antitorque pedal as collective is added to cushion landing, resulting in a touchdown while the helicopter is moving side-ward.
4. Failing to maintain a speed that takes advantage of effective translational lift.