

TECHNIQUE

Refer to figure 10-2. To begin the maneuver, first align the helicopter to the takeoff path. Next, increase the throttle to obtain takeoff r.p.m., and increase the collective smoothly until the helicopter becomes light on the skids or landing gear (position 1). Then, move the cyclic slightly forward of the neutral hovering position, and apply additional collective to start the forward movement (position 2). To simulate a reduced power condition during practice, use one to two inches less manifold pressure, or three to five percent less torque, than that required to hover.

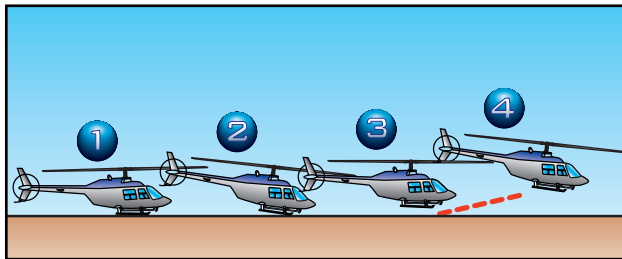


Figure 10-2. Running/rolling takeoff.

Maintain a straight ground track with lateral cyclic and heading with antitorque pedals until a climb is established. As effective translational lift is gained, the helicopter becomes airborne in a fairly level attitude with little or no pitching (position 3). Maintain an altitude to take advantage of ground effect, and allow the airspeed to increase toward normal climb speed. Then, follow a climb profile that takes you through the clear area of the height/velocity diagram (position 4). During practice maneuvers, after you have climbed to an altitude of 50 feet, establish the normal climb power setting and attitude.

COMMON ERRORS

1. Failing to align heading and ground track to keep surface friction to a minimum.
2. Attempting to become airborne before obtaining effective translational lift.
3. Using too much forward cyclic during the surface run.
4. Lowering the nose too much after becoming airborne, resulting in the helicopter settling back to the surface.
5. Failing to remain below the recommended altitude until airspeed approaches normal climb speed.

RAPID DECELERATION (QUICK STOP)

In normal operations, use the rapid deceleration or quick stop maneuver to slow the helicopter rapidly and bring it to a stationary hover. The maneuver requires a high degree of coordination of all controls. It is practiced at an altitude that permits a safe clearance between the tail rotor and the surface throughout the maneuver, especially at the point where the pitch attitude is highest. The altitude at completion should be no higher than the maximum safe hovering altitude prescribed by the manufacturer. In selecting an altitude at which to begin the maneuver, you should take into account the overall length of the helicopter and the height/velocity diagram. Even though the maneuver is called a rapid deceleration or quick stop, it is performed slowly and smoothly with the primary emphasis on coordination.

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During training always perform this maneuver into the wind. [Figure 10-3, position 1] After leveling off at an altitude between 25 and 40 feet, depending on the manufacturer's recommendations, accelerate to the desired entry speed, which is approximately 45 knots for most training helicopters (position 2). The altitude you choose should be high enough to avoid danger to the tail rotor during the flare, but low enough to stay out of the crosshatched or shaded areas of the height/velocity diagram throughout the maneuver. In addition, this altitude should be low enough that you can bring the helicopter to a hover during the recovery.

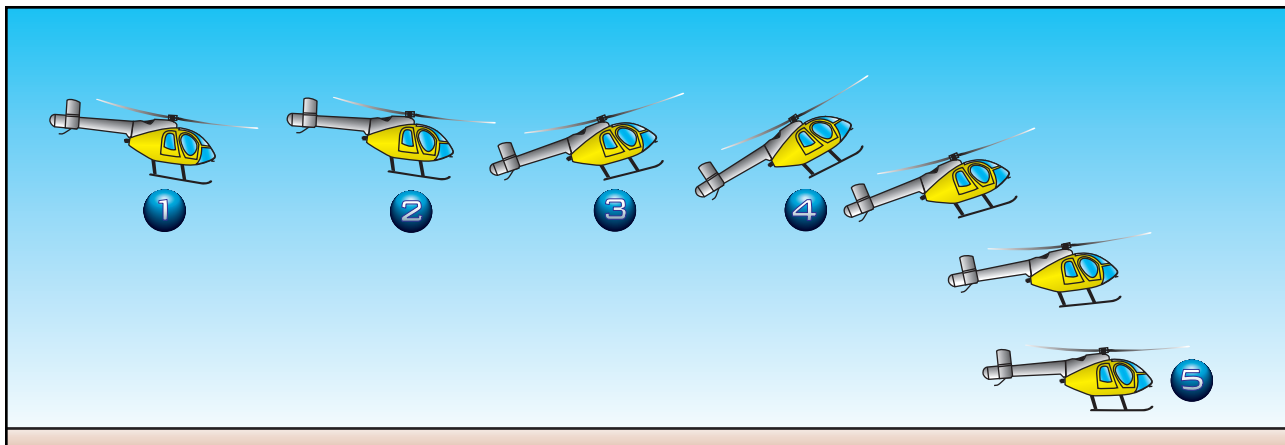


Figure 10-3. Rapid deceleration or quick stop.