

Safety Notice SN-9

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MANY ACCIDENTS INVOLVE DYNAMIC ROLLOVER

A dynamic rollover can occur whenever the landing gear contacts a fixed object, forcing the aircraft to pivot about the object instead of about its own center of gravity. The fixed object can be any obstacle or surface which prevents the skid from moving sideways. Once started, dynamic rollover cannot be stopped by application of opposite cyclic alone. For example, assume the right skid contacts an object and becomes the pivot point while the helicopter starts rolling to the right. Even with full left cyclic applied, the main rotor thrust vector will still pass on the left side of the pivot point and produce a rolling moment to the right instead of to the left. The thrust vector and its moment will follow the aircraft as it continues rolling to the right. Quickly applying down collective is the most effective way to stop a dynamic rollover.

To avoid a dynamic rollover:

- 1) Always practice hovering autorotations into the wind and never when the wind is gusty or over 10 knots.
- 2) Never hover close to fences, sprinklers, bushes, runway lights or other obstacles a skid could catch on.
- 3) Always use a two-step liftoff. Pull in just enough collective to be light on the skids and feel for equilibrium, then gently lift the helicopter into the air.
- 4) Do not practice hovering maneuvers close to the ground. Keep the skids at least five feet above the ground when practicing sideward or rearward flight.

TAKEOFF TO A HOVER

PURPOSE:

To transition from the ground to a stabilized 5-foot hover.

DESCRIPTION:

After completing a pre-takeoff check, clear the helicopter left and right. With the collective full down and the cyclic and pedals neutralized, slowly increase the throttle. As the RPM passes 80%, the governor will activate and increase the RPM to 104%. Increase the collective and a small amount of left pedal will be required to compensate for the increased torque. As the helicopter becomes light on the skids, select a reference point 50 to 75 feet in front of the helicopter and neutralize all aircraft movement with the cyclic and pedals. Continue to increase the collective smoothly and slowly, maintaining heading with slight pedal corrections. Since the R22 normally hovers in a nose low attitude with two occupants, the heels of the skids will break ground first. Compensate with aft cyclic. As the helicopter becomes light on the skids, extreme caution must be used to avoid any rearward or lateral movement since this can cause an immediate rollover. Should any lateral or rearward movement occur, immediately lower the collective and begin again. The helicopter should rise vertically, maintaining heading with pedals, position over the ground with cyclic, and altitude with the collective. After attaining a stabilized 5-foot hover, perform hover check:

1. RPM— 104%
2. Engine instruments— Green Range
3. Hover power— (Manifold Pressure)
4. Carb. Heat— As Necessary

PERFORMANCE STANDARDS:

	Private	Commercial
Altitude	± 2 feet	± 1 foot
Heading	± 10°	± 5°
Position	10' Circle	5' Circle