ACS HELICOPTER MANEUVER SERIES · 7 OF 24

Normal and Crosswind Approach

Area of Operation V — Takeoffs, Landings, and Go-Arounds

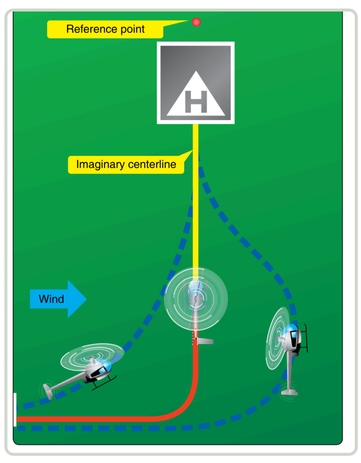
Private Pilot task PH.V.B **Commercial Pilot task** CH.V.B

Poster 07 of 24

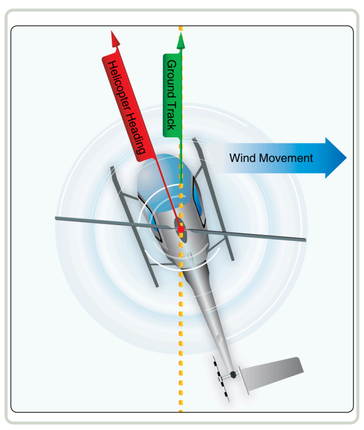
Objective. To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with a normal and crosswind approach.

HOW IT IS FLOWN

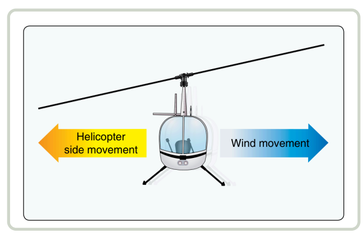
condensed from the FAA Helicopter Flying Handbook, Chapter 9 — Normal Approach to a Hover / to the Surface, Crosswind During Approaches



HFH Figure 9-20. *Plan the turn to final so the helicopter rolls out on an imaginary extension of the centerline for the final approach path. This path should neither angle to the landing area, as shown by the helicopter on the left, nor require an S-turn, as shown by the helicopter on the right.*



HFH Figure 9-14. *To compensate for wind drift at altitude, crab the helicopter into the wind.*



HFH Figure 9-13. *During a slip, the rotor disk is tilted into the wind.*

1. Normal approach angle 7°–12°. On final at approach airspeed and about 300 ft AGL, be on the correct ground track; the fuselage need not be aligned until 50–100 ft AGL.
2. Just before intercepting the angle, lower collective enough to start descending and decelerating; aft cyclic to hold the approach airspeed attitude; pedals for trim.
3. Visualize the line from the landing point to the middle of the skids and fly down it. Collective controls the angle; cyclic controls rate of closure. A consistent angle is the most important standard.
4. Hold entry airspeed until the apparent groundspeed/rate of closure appears to increase, then decelerate slowly with slight aft cyclic and lower collective to stay on the angle. Rate of closure: a brisk walk.
5. At about 25 kt effective translational lift is lost: add collective to hold the angle (and rpm); the nose tends to rise — forward cyclic to keep the closure rate.
6. Arrive at hover height with rate of descent and groundspeed reaching zero together; aft cyclic stops forward movement, pedals hold heading. To the surface (dust/snow): continue to a skids-level, zero-groundspeed touchdown.
7. Crosswind: crab into the wind above 50–100 ft, then slip (cyclic into the wind, pedals for heading) to align the fuselage with the ground track.

COMMON ERRORS — HFH LIST

- Not holding rpm throughout.
- Using collective improperly for the angle.
- No pedal corrections for collective changes.
- Constant airspeed on final instead of an apparent brisk walk.
- Not arriving at hover height, attitude and zero groundspeed together.
- Too much aft cyclic near the surface → tail rotor strike.
- Crab/slip transition at the wrong height.

SKILLS — THE STANDARD

the applicant exhibits the skill to:

	PRIVATE · ACS-15	COMMERCIAL · ACS-16
S1	Complete the appropriate checklist(s).	
S2	Make radio calls as appropriate.	
S3	Determine wind direction with or without visible wind direction indicators.	
S4	Align the helicopter with the correct/assigned runway or touchdown point.	
S5	Scan the landing area/touchdown point and adjoining area for traffic and obstructions.	
S6	Maintain proper ground track with crosswind correction, if necessary.	
S7	Establish and maintain a normal approach angle and rate of closure.	
S8	Maintain powerplant and main rotor (Nr) speed within normal limits.	
S9	**Arrive at the termination point, on the surface or at a stabilized hover, ±4 feet.**	**Arrive at the termination point, on the surface or at a stabilized hover ±2 feet.**
S10	Use runway incursion avoidance procedures, if applicable.	

☐ Shaded rows are where the Commercial standard is tighter than Private. Unshaded rows apply to both certificates.

KNOWLEDGE

PH.V.B.K1–K4 · the applicant demonstrates understanding of:

- Effects of wind, weight, altitude, and temperature on performance.
- Wind correction techniques on approach and landing.
- Landing surface, obstructions, and selection of a suitable touchdown point.
- Factors affecting the profile of the height/velocity (H/V) diagram.

RISK MANAGEMENT

PH.V.B.R1–R12 · identify, assess and mitigate risk associated with:

- Selection of approach path and landing based on aircraft performance and limitations, and wind.
- Effects of:
  - a. Crosswind
  - b. Windshear
  - c. Tailwind
  - d. Turbulence, including wake turbulence
  - e. Vortex ring state (VRS)
  - f. Touchdown surface and condition
- Go-around/rejected landing.
- Collision hazards.
- Distractions, task prioritization, loss of situational awareness, or disorientation.
- Loss of tail rotor effectiveness (LTE).

Standards: FAA-S-ACS-15 Private Pilot Helicopter and FAA-S-ACS-16 Commercial Pilot Helicopter (text reproduced from the current ACS). **References:** AIM; FAA-H-8083-2, FAA-H-8083-21, FAA-H-8083-25; POH/RFM. **Figures and technique:** FAA Helicopter Flying Handbook, FAA-H-8083-21B — figures reproduced unmodified. Always confirm tolerances against the ACS in force on your checkride date and procedures against the R44 POH/RFM.

flyheliadk.com · (518) 634-6375
North Country Heli Flight · Harris Airport (83K), Fort Ann, NY
Hangar teaching series · 24 × 36 in