Confined Area Operations

Area of Operation V — Takeoffs, Landings, and Go-Arounds (Commercial: Area IX — Special Operations)

Private Pilot task PH.V.F **Commercial Pilot task** CH.IX.A

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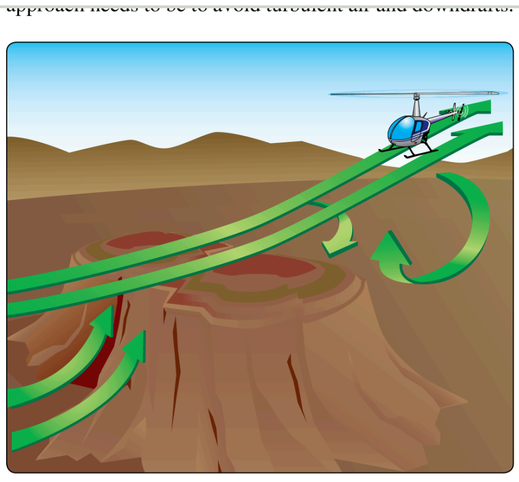
Objective. To determine the applicant exhibits satisfactory knowledge, risk management, and skills associated with confined area operations.

HOW IT IS FLOWN

condensed from the FAA Helicopter Flying Handbook, Chapter 10 — Reconnaissance Procedures, Confined Area Operations



HFH 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.*



HFH Figure 10-9. *When flying an approach to a pinnacle or ridgeline, avoid the areas where downdrafts are present, especially when excess power is limited. If downdrafts are encountered, it may become necessary to make an immediate turn away from the pinnacle to avoid being forced into the rising terrain.*

1. High reconnaissance at 300–500 ft, about a 45° view angle: wind direction/speed, touchdown point, suitability, approach and departure axes, obstacles, and forced-landing areas. Keep a forced-landing area within reach.
2. Low reconnaissance during the approach: confirm what you saw and look for wires (poles and towers reveal them), slopes and crevices. Decide to land or go around before decelerating below ETL or descending below the barriers.
3. Use the wind to best advantage — a crosswind leg over open ground, then into the wind for the final portion. With wind 10 kt or more expect updrafts on the windward side and downdrafts on the lee side of obstacles (Figure 10-8).
4. Angle of descent no steeper than needed to clear the barrier with the tail rotor and land on the spot. Land to a specific point well forward in the area, keep it in sight all the way, and terminate to a hover to check the spot before setting down.
5. Takeoff is altitude over airspeed: reconnoiter from the ground/cockpit, position for the longest run (most downwind), fix the departure heading on the compass, form a line from the leading edge to the top of the highest obstacle and fly it with power to spare; after clearing, keep power and accelerate to climb speed, then set climb power.
6. A barrier cleared by a few feet with normal rpm and reserve power beats a wide margin with low rpm and no reserve. Once on the ground, keep rpm up until stability is checked.

COMMON ERRORS — HFH LIST

- Poor or no high/low reconnaissance.
- Approach angle too steep or too shallow for conditions.
- Not holding rpm.
- Ignoring emergency landing areas.
- No specific landing spot.
- Ignoring wind and turbulence.
- Wrong takeoff/climb technique for conditions.
- Inadequate clearance from obstructions — especially the tail rotor.

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	Confirm power available meets or exceeds the power required for the selected arrival or departure profile(s).	
S4	Determine wind direction with or without visible wind direction indicators.	
S5	Accomplish a proper high and low reconnaissance of the confined landing area.	
S6	Select a suitable approach path, termination point, and departure path.	
S7	Track the selected approach path at an acceptable approach angle and rate of closure to the termination point.	
S8	Continually evaluate the suitability of the confined landing area and termination point.	
S9	Maintain powerplant and main rotor (Nr) speed within normal limits.	
S10	Accomplish a proper ground reconnaissance.	
S11	Terminate in a hover or on the surface, as appropriate.	
S12	Select a suitable takeoff point, considers factors affecting takeoff and climb performance under various conditions.	
S13	Use single-pilot resource management (SRM) or crew resource management (CRM), as appropriate.	

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

KNOWLEDGE

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

- Effects of wind, weight, temperature, and density altitude.
- Situations when a confined area approach and landing is recommended and factors related to landing performance including H/V diagram information.
- High and low reconnaissance, including takeoff and departure planning.
- Power requirements versus power available for the departure or arrival profile(s).

RISK MANAGEMENT

PH.V.F.R1–R18 · identify, assess and mitigate risk associated with:

- Selection of approach path, termination point and departure path based on aircraft performance and limitations, wind, and availability of alternate sites.
- Effects of:
  a. Wind Direction
  b. Windshear
  c. Turbulence
- H/V diagram information.
- Go-around.
- Forced landing during the maneuver.
- Landing surface.
- Dynamic rollover.
- Ground resonance.
- Low rotor rpm.
- Loss of tail rotor effectiveness (LTE).
- Collision hazards.
- Vortex ring state (VRS).
- Aircraft limitations.
- Distractions, task prioritization, loss of situational awareness, or disorientation.
- Power requirements versus power available for the departure or arrival profile(s).

Standards: FAA-S-ACS-15 Private Pilot Helicopter and FAA-S-ACS-16 Commercial Pilot Helicopter (text reproduced from the current ACS). **References:** 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.

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