NCHF Private Pilot (PPL-H) — One-Pagers

Quick-reference memory items by Area of Operation · print-friendly

Area I — Preflight Preparation

Pilot qualifications & currency

- Flight review: every 24 calendar months — 1 hr ground + 1 hr flight + endorsement (61.56).
- Day pax recency: 3 takeoffs & 3 landings in 90 days (61.57(a)). Night: 3 to a full stop, night, in 90 days (61.57(b)).
- Medical: third-class (AME) or BasicMed (physician exam q48 mo + online course q24 mo). Currency ≠ proficiency.

Airworthiness & required documents

- Aboard: ARROW — Airworthiness cert, Registration, Radio license (intl), Operating limitations/POH, Weight & balance.
- Inspections (airplane-style mnemonic AV1ATE): Annual, VOR (IFR), 100-hr (for hire/instruction), Altimeter/pitot-static (IFR), Transponder, ELT. Confirm which apply to your ops/category.

Weather

- Use briefings/products before every flight; know METAR/TAF basics, AIRMET/SIGMET, and density-altitude impact.
- Helicopters are not immune to weather — set personal minimums and a hard go/no-go.

Cross-country & airspace

- Plan course, headings, fuel, and alternates; check NOTAMs and TFRs.
- Airspace classes A–G — know entry/equipment/visibility & cloud-clearance requirements; helicopters have some special-VFR/ops allowances. Confirm helicopter-specific exceptions.

Performance & limitations

- Weight & balance and density altitude drive performance — high/hot/heavy/humid degrades power and lift.
- Use POH performance charts (HOGE/HIGE, takeoff/landing distance) — never a generic number.

Systems (R44)

- Engine → belt/clutch drive → main & tail rotor; sprag clutch enables autorotation; governor manages RPM.
- Pre-takeoff hydraulic check verifies the system and the feel of a failure. Sump fuel first flight + after each refuel.

Human factors & aeromedical

- IMSAFE: Illness, Medication, Stress, Alcohol, Fatigue, Emotion/Eating.
- Watch hypoxia, hyperventilation, CO, dehydration; trust instruments in spatial disorientation. Beware get-there-itis.

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Area II — Preflight Procedures

Preflight inspection & risk (Lesson 09)

- Run the POH preflight checklist — same path every time; no distractions. If interrupted, back up several items.
- Check rotor blades, controls/linkages & hardware, drive/belts, fluids (oil + gearboxes), fuel sumped, airframe/skids.
- PAVE risk buckets: Pilot · Aircraft · enVironment · External pressures — identify and mitigate.

Flight-deck management & passenger briefing (Lesson 10)

- Secure loose items (nothing near the controls); checklist & charts reachable; harnesses/doors set.
- SAFETY brief: Seatbelts · Air/environment · Fire/exits · Emergency/equipment · Traffic/talking · Your questions.
- Rotor safety (critical): approach/depart front or sides in pilot's view — never the rear (tail rotor); stay low, nothing overhead; downslope side on slopes.
- Brief on the ground, engine off. Set “sterile” times (takeoff/approach).

Engine start, rotor engagement & before-takeoff (Lesson 11)

- Always the POH Section 4 checklist, never memory. Call “CLEAR” and check the area before start/engagement.
- After start: confirm oil pressure rises promptly; engage clutch smoothly, watch the clutch light and rotor.
- Before takeoff: governor holds RPM in the green · hydraulic check done · gauges in limits · controls free & correct · area clear · briefing complete.
- Any abnormal gauge, light, or noise = shut down and investigate, not “watch and go.”

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Area III — Airport & Heliport Operations

Communications (Lesson 12)

- Standard call = who you're calling · who you are · where you are · what you want. Be brief; use phonetics.
- Towered: do/read back ATC instructions (hold-short, runway). Non-towered: self-announce on CTAF.
- Lost comms VFR: squawk 7600, watch for light-gun signals, land where safe.

ATC light-gun signals (Lesson 12)

- Steady green: in flight = cleared to land · ground = cleared for takeoff.
- Flashing green: in flight = return for landing · ground = cleared to taxi.
- Steady red: in flight = give way/circle · ground = stop.
- Flashing red: in flight = airport unsafe, don't land · ground = taxi clear of runway in use.
- Flashing white (ground): return to starting point. Alt. red/green: extreme caution.

Markings & signs (Lesson 12)

- Runway markings white; taxiway markings/signs yellow. Solid double-yellow = hold short.
- Signs: mandatory = red/white · location = black/yellow · direction = yellow/black.
- Heliport: TLOF (touchdown/lift-off) inside the FATO (final approach & takeoff area).

Traffic patterns & heliport ops (Lesson 13)

- Helicopter pattern is lower & tighter, terminates to a spot other than the active runway, often opposite the airplane direction.
- Pattern altitude commonly ~500–1,000 ft AGL (general) — no single number; look up the field in ForeFlight (Chart Supplement/sectional) for altitude, direction & frequencies.
- Be predictable, self-announce, scan continuously, avoid wake; brief a go-around before short final.
- At a heliport, plan each approach to the spot around wind/obstacles/downwash — no fixed geometry.

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Area IV — Hovering Maneuvers

The hover (Lesson 14)

- Collective = power/height · Cyclic = position over ground · Pedals = heading. Move one, you disturb the others.
- Look well ahead; make small, anticipatory corrections; learn one control at a time, then combine.
- Ground effect: within ~1 rotor diameter, an IGE hover needs less power than OGE. Plan for OGE/high-DA limits.

Taxi types (Lesson 15)

- Hover taxi (IGE): in ground effect, slow, < ~25 ft AGL — short moves; high fuel burn, strong downwash.
- Air taxi (OGE): out of ground effect, ~40 ft AGL (AIM ceiling 100 ft), may exceed ~20 kt — greater distances; avoid overflying others.
- Surface/ground taxi: on the surface via taxiways (wheel-equipped) — least fuel & downwash.
- Choose by distance, surface, traffic, and density altitude; request/accept with correct phraseology.

Risk & performance

- Dynamic rollover lives near the ground: keep level & drift-free; if a skid-pivot begins, smoothly lower collective.
- Before air-taxiing, clear the path and the downwash footprint — no overflight of people, vehicles, or parked aircraft.
- Air taxi is low/slow flight near OGE limits — hot/high or downwind segments can exceed power available.

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Area V — Takeoffs, Landings & Go-Arounds

Normal takeoff & climb (L16)

- From a stable IGE hover, forward cyclic to accelerate; anticipate the ETL pitch-up (~16–24 kt), then a coordinated climb.
- Climb at the POH airspeed; keep the ball centered; a consistent profile avoids the H-V 'avoid' zones.

Normal approach & landing (L17)

- Stabilized = constant angle to aim point, decreasing closure; collective controls rate, cyclic controls angle/closure.
- Expect ETL loss near the bottom — add power smoothly to a stationary hover. Large late corrections → go around.

Crosswind, slope & confined (L18)

- Crosswind: disc into the wind, hold heading, anticipate drift/weathervane.
- Slope: upslope skid down first; if cyclic runs out before downslope skid is down, ABORT.
- Confined: high/low recon + landing point + escape path + power check before committing.

Go-around / rejected takeoff (L19)

- A go-around is a normal, planned option — decide EARLY; apply power smoothly (avoid low RPM), accelerate through ETL.
- High-DA go-arounds are power-limited — confirm the climb is achievable.

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Area VI — Fundamentals / Aerodynamics

Four forces & the controls (L20)

- Lift/weight/thrust/drag balanced via disc tilt and collective pitch; collective = power/height, cyclic = direction, pedals = heading/antitorque.

Translating tendency, dissymmetry & ETL (L21)

- Translating tendency: tail-rotor thrust drifts you sideways — correct with cyclic.
- Dissymmetry of lift equalized by blade flapping (advancing up, retreating down).
- ETL ~16–24 kt: rotor reaches clean air, gains efficiency, nose pitches up — anticipate with cyclic.

Density altitude & performance (L22)

- DA = pressure altitude corrected for temperature; rises with heat/altitude/humidity/low pressure.
- High DA = less power & thrust; compute hover/takeoff from POH Section 5 before flight; treat marginal OGE numbers as no-go.

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Area VII — Performance Maneuvers

Rapid deceleration / quick stop (L23)

- Smooth and coordinated: aft cyclic to slow, lower collective to prevent ballooning, pedal to hold heading, then raise collective to arrest descent into a hover.
- Governor/throttle holds RPM in the green throughout.
- Hazards: tail strike (too much nose-up too low) and low RPM/ballooning (collective mismanagement). Conservative entry height/airspeed.

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Area VIII — Navigation

Pilotage & dead reckoning (L24)

- Pilotage: visual checkpoints on the sectional, spaced for a position check every few minutes; chart-to-ground-to-chart.
- Dead reckoning: time/airspeed/distance/heading + wind → heading, groundspeed, ETAs. Fly DR, confirm with pilotage.

Nav systems & radar services (L25)

- GPS = position/track (needs current DB); VOR = ground-based backup. Know failure modes; cross-check.
- VFR flight following = traffic advisories, workload-permitting — see-and-avoid still applies. ADS-B Out broadcasts position.

Diversion & lost procedures (L26)

- Divert: turn to the alternate first, then refine heading/time/fuel.
- Lost: Climb, Communicate, Confess, Comply, Conserve. Ask for help before fuel/daylight is critical.
- Beware get-there-itis and GPS over-reliance.

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Area IX — Emergency Operations

Powerplant & systems malfunctions (L27)

- Fly first (RPM/airspeed/landing area), then diagnose, then run POH Section 3. Complete power loss → autorotation.
- Hydraulic = higher control forces; electrical = load management; governor = manual RPM.

Settling with power / VRS (L29) & Low rotor RPM (L30)

- VRS = high sink + slow (below ETL) + power; adding collective worsens it. Recover by gaining airspeed; prevent with stabilized approaches.
- Low RPM: lower collective + roll on throttle (aft cyclic in fwd flight) — instant reflex; can stall the rotor in seconds.

Dynamic rollover / ground resonance (L31) & LTE (L32)

- Dynamic rollover: pivot + roll past critical angle — recover by smoothly lowering collective; stay level/drift-free.
- Ground resonance: from uneven touchdown — act per POH. LTE: wind-induced yaw — pedal + airspeed; true TR failure per POH.

Emergency equipment & survival gear (L33)

- ELT + 91.205 required items; route/season-appropriate survival kit (esp. North Country cold). Keep accessible; know how to use; brief pax.

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Area X — Night Operations

Night physiology, equipment & operations (L34)

- Rods (low-light/peripheral) vs cones (day/detail); night blind spot → use off-center viewing; dark adaptation ~30 min (protect with red/low light).
- Illusions: autokinesis, false horizon, black-hole approach — back up vision with instruments.
- Confirm aircraft lighting, carry a red-lens flashlight, plan extra fuel, and verify night currency before carrying passengers.

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Area XI — Postflight

After-landing, parking & securing (L35)

- Run the POH after-landing/cool-down/shutdown in order; let the rotor coast down; keep bystanders clear.
- Park clear; install blade tie-downs/covers & control locks — and REMOVE them before the next start.
- Mind hot exhaust and downwash FOD while the rotor turns.

Postflight inspection & records (L36)

- Fresh-eyes walk-around: leaks, cracks, hardware, blade/tail-rotor condition, FOD/bird strikes, fluids.
- Log time accurately; write up squawks clearly — airworthiness depends on honest records.
- Resist normalizing defects; when in doubt, write it up and ground it.

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