# FLIGHT 15 — STALL COMPLETION (carried from FT-13): card 15-1

N997CZ RV-10 — **Flight 15**. Portrait; each card = a SCRIPT page then its cut-out CARD page. 15-1 = accel/turning stall carried from Flight 13; 15-2/15-3 begin climb performance (Vx/Vy + cooling). Mid/fwd CG, generous floors. Built 2026-06-08.

# Accelerated / Turning Stall

## FT-15-1 — SCRIPT (briefing) · FLIGHT 15 — STALL COMPLETION (carried from FT-13): card 15-1

### Objective

• Document the accelerated (turning) stall — higher load factor and a higher break IAS than the 1-g stall — and confirm a prompt, benign recovery. This is the one FT-13 stall card not completed on Flight 13, carried forward.

### Set-up & recovery brief

• Day VMC, smooth air, ceiling/vis ≥ 5,000 / 5; MID-to-FORWARD CG (record). NOT aft CG.
• **CO detector ON — slow flight is where cabin CO has appeared (F6-F11). Abort the run if CO ≥ 5 ppm.**
• Enter AT OR ABOVE 7,500 ft MSL; recover BY 6,000 ft MSL; two 90° clearing turns first.
• RECOVERY: reduce AoA (stick forward) → level wings with RUDDER (no aggressive aileron at high AoA) → add power → minimize altitude loss. Wing drop → opposite rudder + unload FIRST. RV-10 is NOT approved for spins.

### Config

• Flaps UP, power IDLE (or low), mid CG, 30° bank.

### Procedure

• Establish a coordinated 30° bank level turn at ~90 KIAS, idle/low power.
• Smoothly increase back-pressure (~1-2 kt/s) until the break — do NOT exceed 30° bank or pull aggressively.
• Recover at the break (reduce AoA; level wings with rudder first if it rolls).
• Repeat both directions. Note the break IAS is higher than 1-g.

### Watch

• Over-bank / nose slice at the break, especially toward the low wing. Keep the ball centered; unload promptly. Floor 6,000 MSL.

ASI note: ASI reads LOW ~2-3 kt (F11 cal): CAS ≈ IAS + 2-3 kt. Log TAS/CAS from analysis, not the indicator.
Speeds: Vne 200 / Vno 156 / Va 125 (gross) / Vfe 87 / Vs1 clean ~61 / Vs0 full-flap ~52 (all KIAS, placard)

→ The cut-out CARD for this maneuver is on the NEXT page.

## FT-15-1 — FLIGHT CARD (kneeboard)

| N997CZ RV-10 · FLIGHT 15 | | | FT-15-1 |
|---|---|---|---|
| **Date** | | **Time** | |
| **OAT °F** | | **Wt / CG** | |
| **Press alt** | | **Wx** | |
| **Fuel / tank** | | **Page** | |

# ACCELERATED / TURNING STALL

- ☐ CO ON — abort if ≥ 5 ppm · CG mid/fwd
- ☐ Enter ≥ 7,500 MSL · recover by 6,000 · clearing turns
- ☐ Flaps UP · IDLE/low · 30° bank MAX
- ☐ From ~90 KIAS, coordinated turn; smooth back-pressure ~1-2 kt/s → break
- ☐ RECOVER: AoA down → wings level w/ RUDDER → power
- ☐ Wing drop → opp rudder + unload first · both directions

## Record

| Dir | Bank | Break IAS | Behavior at break |
|---|---|---|---|
| Left | 30° | | |
| Right | 30° | | |

ASI note: ASI reads LOW ~2-3 kt (F11 cal): CAS ≈ IAS + 2-3 kt. Log TAS/CAS from analysis, not the indicator.
Speeds: Vne 200 / Vno 156 / Va 125 (gross) / Vfe 87 / Vs1 clean ~61 / Vs0 full-flap ~52 (all KIAS, placard)

✂ cut along the box — carry it on the kneeboard; keep the SCRIPT page for briefing.

## FLIGHT 15 — CLIMB PERFORMANCE: cards 15-2 to 15-3

N997CZ RV-10 — **Flight 15**. Portrait; each card = a SCRIPT page then its cut-out CARD page. 15-1 = accel/turning stall carried from Flight 13; 15-2/15-3 begin climb performance (Vx/Vy + cooling). Mid/fwd CG, generous floors. Built 2026-06-08.

# Climb Performance — Set-Up, Power & Cooling Limits

### FT-15-2 — SCRIPT (briefing) · FLIGHT 15 — CLIMB PERFORMANCE: cards 15-2 to 15-3

#### Purpose

• Establish a safe, repeatable FULL-POWER climb block and protect the engine. N997CZ runs hot in the climb (Cyl 5 & Cyl 1 are the canaries), so cooling limits gate the sortie. Same block as 15-3.

#### Pre-conditions

• Day VMC, smooth air, ≥ 5,000 / 5; MID-to-FORWARD CG (record).
• CO detector ON — abort a run if CO ≥ 5 ppm.
• Oil temp green & quantity checked; fuel adequate on the SELECTED tank (note selector).

#### Power & mixture

• Full throttle, prop FULL FORWARD (≤ 2,700 RPM), boost pump per checklist.
• Mixture FULL RICH low; lean only for smooth running above ~5,000 ft DA — do NOT lean aggressively at high power.

#### Engine limits (HARD) & abort

• CHT: keep <420°F; if ANY cylinder hits 450°F → lower the nose / add speed / level off to cool. NEVER exceed 500°F (Lycoming red line; program worst-ever 467°F). Cyl 5 & Cyl 1 run hottest — watch them first.
• Oil temp: keep below ~220°F; level off to cool near the red line.
• Abort a run for CHT 450°F, hot oil, rough running, or CO ≥ 5 — level off, enrich/cool, RTB if it persists.

#### Set-up

• Pick a ~3,000 ft test BAND (e.g. 4,000 → 7,000 MSL); stabilize speed ~500 ft below the band bottom.
• Clear the block (two 90° clearing turns); fly runs on RECIPROCAL headings to average the wind.
• Record OAT, pressure alt, weight/CG, fuel.

ASI note: ASI reads LOW ~2-3 kt (F11 cal): CAS ≈ IAS + 2-3 kt. Log TAS/CAS from analysis, not the indicator.
Speeds: Vne 200 / Vno 156 / Va 125 (gross) / Vfe 87 / Vs1 clean ~61 / Vs0 full-flap ~52 (all KIAS, placard)

→ The cut-out CARD for this maneuver is on the NEXT page.

## FT-15-2 — FLIGHT CARD (kneeboard)

| N997CZ RV-10 · FLIGHT 15 | | FT-15-2 | |
|---|---|---|---|
| Date | | Time | |
| OAT °F | | Wt / CG | |
| Press alt | | Wx | |
| Fuel / tank | | Page | |

# CLIMB PERFORMANCE — SET-UP, POWER & COOLING LIMITS

## SET-UP (every climb run)

- ☐ Wx ≥ 5,000/5, smooth · CG mid/fwd
- ☐ CO ON — abort if ≥ 5 ppm
- ☐ Full throttle · ≤2,700 RPM · prop full fwd
- ☐ Mixture FULL RICH low; lean only for smoothness >5,000 ft DA
- ☐ Band ~3,000 ft · stabilize 500 ft below · reciprocal headings
- ☐ Clearing turns · record OAT / alt / wt-CG / fuel

## ENGINE LIMITS — HARD

- ☐ CHT keep <420 · LEVEL OFF if any ≥450 · NEVER 500
- ☐ Cyl 5 & Cyl 1 hottest in climb — watch first
- ☐ Oil temp keep <220 · level off to cool

ASI note: ASI reads LOW ~2-3 kt (F11 cal): CAS ≈ IAS + 2-3 kt. Log TAS/CAS from analysis, not the indicator.
Speeds: Vne 200 / Vno 156 / Va 125 (gross) / Vfe 87 / Vs1 clean ~61 / Vs0 full-flap ~52 (all KIAS, placard)

✂ cut along the box — carry it on the kneeboard; keep the SCRIPT page for briefing.

# Climb Performance — Timed / Sawtooth Climbs (Vx / Vy)

## FT-15-3 — SCRIPT (briefing) · FLIGHT 15 — CLIMB PERFORMANCE: cards 15-2 to 15-3

### Objective

• Measure rate of climb vs indicated airspeed to find Vy (best RATE — the peak ROC) and Vx (best ANGLE — a lower speed, steepest path). Both are TO BE DETERMINED by this test; sweep IAS values bracketing the expected best-climb speeds rather than assuming a number.

### Config

• Flaps UP, full power per the 15-2 set-up, ball centered, mid CG.

### Procedure

• SAWTOOTH method: time the climb through a fixed altitude BAND (~3,000 ft) at each target IAS, full power, holding IAS within ±2 kt.
• Stabilize the target speed ~500 ft BELOW the band bottom so the airplane is settled at band entry.
• Start the stopwatch at the band bottom, stop at the band top. Record time, OAT, RPM/MAP, fuel flow, and the MAX CHT at the top.
• Fly each speed, then a RECIPROCAL-heading run at the same speed; average the two to cancel the wind component.
• Sweep, e.g. 80, 90, 100, 110 KIAS (add 75 / 120 only if cooling allows).
• Reduce later: ROC = band height ÷ time. Plot ROC vs IAS — Vy is the peak; Vx ≈ the lowest speed still giving a steep angle (a few kt above clean stall).

### Watch

• Hold IAS smoothly — don't chase it. Honor the 15-2 CHT limits: if a cylinder hits 450°F, abort that run, lower the nose to cool, and resume at a higher IAS. Level / clear by the band top, then re-position for the next run. Mind traffic stacking in the block.

ASI note: ASI reads LOW ~2-3 kt (F11 cal): CAS ≈ IAS + 2-3 kt. Log TAS/CAS from analysis, not the indicator.
Speeds: Vne 200 / Vno 156 / Va 125 (gross) / Vfe 87 / Vs1 clean ~61 / Vs0 full-flap ~52 (all KIAS, placard)

→ The cut-out CARD for this maneuver is on the NEXT page.

## FT-15-3 — FLIGHT CARD (kneeboard)

| N997CZ RV-10 · FLIGHT 15 | | | FT-15-3 |
|---|---|---|---|
| Date | | Time | |
| OAT °F | | Wt / CG | |
| Press alt | | Wx | |
| Fuel / tank | | Page | |

# CLIMB PERFORMANCE — TIMED / SAWTOOTH CLIMBS (VX / VY)

☐ Flaps UP · full power · IAS ±2 kt

☐ Band ____ → ____ MSL (~3,000 ft) · stabilize 500 ft below

☐ Time band bottom→top (note MAX CHT); each speed + reciprocal

☐ CHT ≥ 450 → abort run, cool, go faster

## Record (climb time, seconds; 75 & 120 optional)

| Tgt IAS | Time A | Time B | CHT max | OAT |
|---|---|---|---|---|
| 75 | | | | |
| 80 | | | | |
| 90 | | | | |
| 100 | | | | |
| 110 | | | | |
| 120 | | | | |

ASI note: ASI reads LOW ~2-3 kt (F11 cal): CAS ≈ IAS + 2-3 kt. Log TAS/CAS from analysis, not the indicator.
Speeds: Vne 200 / Vno 156 / Va 125 (gross) / Vfe 87 / Vs1 clean ~61 / Vs0 full-flap ~52 (all KIAS, placard)

✂ cut along the box — carry it on the kneeboard; keep the SCRIPT page for briefing.