LANCAIR EVOLUTION (PT6A-135A)
QUICK REFERENCE GUIDE (QRG)
X PLANE 12 USE ONLY

TAKEOFF & CLIMB

- **Vr (Rotation Speed)**: 85–90 KIAS
- **V1 (Decision Speed)**: 85 KIAS (typical, not certified)
- **V2 (Takeoff Safety Speed)**: 100 KIAS
- **Initial Climb Speed**: 140 KIAS
- **Best Angle of Climb (Vx)**: 110 KIAS
- **Best Rate of Climb (Vy)**: 140 KIAS
- **Climb Power Setting**: Max Continuous Torque (~1015 ft-lbs @ 2000 RPM)
- **Gear Retraction**: Positive rate confirmed
- **Flap Retraction**: Retract from Takeoff (T/O) to UP by 120 KIAS

CRUISE PERFORMANCE

- **Normal Cruise Speed**: 270–300 KTAS (FL250–FL280)
- **Long Range Cruise**: 220–240 KTAS @ FL270–FL280
- **Recommended Cruise Altitude**: FL240–FL280
- **Fuel Flow**: ~35–42 GPH depending on power setting
- **Cruise Power Setting**: 1250–1350 ft-lbs Torque / 1700–1900 RPM

DESCENT

- **Normal Descent Speed**: 200–240 KIAS
- **Idle Descent**: Maintain 200–220 KIAS
- **Descent Planning**: ~3–4 nm per 1000 ft
- **Pressurization**: Monitor cabin rate (typical max: 500 fpm descent rate in cabin)

APPROACH & LANDING

- **Downwind**: 140–160 KIAS | Flaps UP
- **Base**: 120–130 KIAS | Flaps T/O
- **Final Approach**: 100–110 KIAS | Flaps Landing
- **Short Field Approach**: 90–95 KIAS | Full flaps
- **Touchdown**: ~85 KIAS
- **Braking**: Beta or reverse if available, smooth application

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V-SPEEDS SUMMARY

V-Speed	Value (KIAS)	Definition
Vso	65	Stall speed in landing config
Vs1	78	Stall speed in clean config
Vr	85–90	Rotation speed
V1	85	Decision speed (typical, experimental aircraft)
V2	100	Takeoff safety speed
Vx	110	Best angle of climb
Vy	140	Best rate of climb
Vfe (T/O)	140	Max flap extension for Takeoff flap
Vfe (Landing)	125	Max flap extension full
Vle/Vlo	176	Max gear extension/retraction speed
Va	135–160	Maneuvering speed (varies with weight)
Vmo	240	Max operating speed (do not exceed)
Vne	250	Never exceed speed
Vref	95–105	Reference approach speed (varies by weight)

EMERGENCY OPERATIONS

- **Best Glide Speed**: 120 KIAS
- **Engine Failure During Takeoff (Below Vr)**: Abort takeoff

- **Engine Failure After Liftoff**:
    - Gear UP, Flaps UP
    - Maintain V2 (100 KIAS), pitch for 140 KIAS once stable
    - Identify, secure engine
- **Enroute Engine Failure**:
    - Maintain 120 KIAS (best glide)
    - Select suitable landing area
    - Attempt restart (Fuel, Ignition, Air, Electrical)
- **Dual Electrical Failure**: Emergency battery and essential bus checklist
- **Cabin Decompression**:
    - Emergency descent: 200 KIAS
    - Oxygen: ON
    - Descend to 10,000 ft or safe altitude

NOTES

- All speeds assume maximum gross weight unless otherwise noted
- Always refer to POH/AFM and aircraft-specific supplements
- Pressurization limits: Maintain cabin pressure differential ≤ 6.5 psi
- This aircraft is experimental; verify data against builder/operator configuration

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