Stinson L-5 Sentinel

QUICK REFERENCE GUIDE (QRG)

X Plane 12 Use ONLY

Single-engine, high-wing WWII liaison and observation aircraft

GENERAL AIRCRAFT DATA

- **Crew**: 2 (Pilot + Observer/Passenger)
- **Powerplant**: Lycoming O-435-1 or -11, 6-cylinder, ~185 hp
- **Configuration**: High-wing, taildragger
- **Fuel Capacity**: ~50 gallons (main + auxiliary)
- **Gross Weight**: ~2,300 lbs
- **Empty Weight**: ~1,600 lbs
- **Wing Span**: 34 ft
- **Length**: 24 ft
- **Propeller**: Fixed-pitch, 2-blade

PERFORMANCE DATA

Performance Metric	Value
Takeoff Distance (over 50 ft)	~1,000 ft (grass, calm)
Landing Distance (over 50 ft)	~800 ft
Rate of Climb (Sea Level)	~900–1,000 fpm
Max Range	~300–350 nm
Service Ceiling	~15,000 ft
Cruise Altitude (typical)	3,000–10,000 ft
Fuel Burn (Cruise)	~10–11 gph

V-SPEEDS SUMMARY

Speed	KIAS	Description
Vne	148	Never exceed speed
Va (Maneuvering)	100–105	Max control use speed
Vno (Max Structural Cruise)	122	Do not exceed in turbulence
Vs (Clean Stall)	~49	Stall speed, no flaps
Vso (Landing Configuration)	~43	Stall speed with flaps
Vr (Rotation)	~50–55	Typical rotation speed
Vy (Best Rate of Climb)	~70	Best sustained climb
Vx (Best Angle of Climb)	~60	Best short-field/climb out
Vg (Best Glide)	~70	Engine-out glide speed
Final Approach	~55	Short field, full flaps

TAKEOFF PROCEDURE

- **Flaps**: 0–20° recommended for short field
- **Tail up at**: ~40 KIAS
- **Rotate**: ~50–55 KIAS
- **Climb Speed (Vy)**: 70 KIAS
- **Climb Power**: Full throttle, reduce as needed above 500 ft AGL
- **Flaps Up**: After obstacle clearance

CRUISE

- **Typical Cruise Speed**: 90–105 KIAS
- **Cruise Power Setting**: 2100–2300 RPM
- **Fuel Flow**: ~10–11 GPH
- **Mixture**: Lean above 3,000 ft for economy
- **Range**: ~300+ nm at 90 KIAS

DESCENT & APPROACH

- **Descent Speed**: 85–95 KIAS (initial), 65–70 KIAS on base/final
- **Flap Settings**:
    - Base: 20°
    - Final: 30–40°
- **Final Approach Speed**: 55 KIAS
- **Short Field Approach**: 50–55 KIAS, 40° flaps
- **Touchdown**: 45–50 KIAS, 3-point or wheel landing as desired
- **Landing Roll**: ~400–600 ft (short field technique)

STALL BEHAVIOR

- **Clean Stall (no flaps)**: ~49 KIAS
- **Full Flap Stall (Landing)**: ~43 KIAS
- **Stall Recovery**:
    1. Reduce angle of attack
    2. Add power smoothly
    3. Level wings
    4. Resume climb at Vy

Stalls are gentle and predictable; good warning buffet.

EMERGENCY PROCEDURES

Engine Failure – In Flight

- **Airspeed**: Best glide ~70 KIAS
- **Select Landing Area**: Straight ahead or 30° off
- **Mixture**: RICH
- **Throttle**: IDLE
- **Carb Heat**: ON
- **Magnetos**: BOTH
- **Fuel Selector**: ON
- **Primer**: IN and LOCKED
- **Restart if Altitude Permits**
- **If No Restart**:
    - Flaps as needed
    - Master and mags OFF on final

Engine Fire – In Flight

- Fuel OFF
- Mixture CUTOFF
- Throttle IDLE
- Cabin Heat/OFF
- Forced Landing – Execute

Electrical Failure

- Master Switch: CHECK
- Circuit Breakers: CHECK/RESET
- Battery OFF if fire/smoke
- Land as soon as practical

AIRCRAFT LIMITATIONS

- **Max Gross Weight**: ~2,300 lbs
- **Max Baggage**: ~100 lbs (location-specific)
- **CG Range**: Refer to weight & balance sheet
- **Flaps Extension Limit**: ~100 KIAS max
- **Fuel Type**: 80/87 or 100LL avgas
- **Oil Capacity**: ~8–10 quarts
- **Recommended Oil Temp Range**: 170–200°F

PILOT NOTES

- Tailwheel aircraft: Be mindful of ground loop tendencies
- Avoid steep banks <300 ft AGL
- Great visibility; ideal for low-speed observation
- Built to operate from short and unimproved fields
- Use forward slip for additional descent control
- Always perform a control surface check for fabric integrity

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