Schleicher ASK 21

QUICK REFERENCE GUIDE (QRG)

Two-seat glass-reinforced plastic (GRP) sailplane – Basic & Aerobatic Training

X Plane 12 Use ONLY.

GENERAL

- **Configuration: Tandem 2-seat, T-tail, mid-wing glider**
- **Construction: Composite (fiberglass/foam core)**
- **Launch Methods: Aero tow, winch, or self-launch (with Mi or MiB variants)**

WEIGHT & BALANCE

- **Max All-Up Weight: 600 kg (1323 lbs)**
- **Min Solo Flight Weight (front seat): 70 kg (154 lbs)**
- **Min Flight Weight Dual: 160 kg (353 lbs)**
- **Water Ballast: Not permitted**
- **Baggage Compartment Limit: 5 kg max**

COCKPIT CHECKLIST (Before Launch)

- **Canopy: Locked**
- **Straps: Secure**
- **Instruments: On, zeroed, set**
- **Controls: Free and correct**
- **Airbrakes: Check full travel and lock**
- **Trim: Set for takeoff**
- **Ballast: Checked and confirmed**
- **Radio: On and tested**
- **Release: Connected and tested**

LAUNCH

- **Winch Launch Speed:**
  - **65 KIAS (standard)**
  - **Limit: Max 75 KIAS**
- **Aerotow Speed:**
  - **Normal: 65–75 KIAS**
  - **Max: 118 KIAS**
- **Best Practice: Hold wings level; climb at 60–65 KIAS**
- **Trim: Adjust as required during climb**

V-SPEEDS SUMMARY

V-Speed	KIAS	Definition
Vne	151	Never exceed speed
Vra (Rough Air)	108	Max in turbulent conditions
Vto (Aerotow)	118	Max during tow
Winch Launch Max	75	Max winch launch speed
Best Glide (L/D Max)	58	Best glide ratio (~34:1)
Min Sink	45	Min vertical sink speed
Stall Speed (clean)	~38	At solo weight, clean
Approach Speed	54–60	Normal, varies by weight and wind
Aerobatic Entry	≤118	Max speed for maneuvers (if approved variant)

FLIGHT PERFORMANCE

- **Glide Ratio: 34:1 @ 58 KIAS**
- **Minimum Sink Rate: ~0.6 m/s (118 fpm) @ 45 KIAS**
- **Stall Characteristics: Benign, with pre-stall buffeting**
- **Spin: Prohibited unless operating certified ASK 21B or Mi with spin kit**

CIRCUIT & APPROACH

- **Downwind: 60–65 KIAS**
- **Base to Final: 55–60 KIAS**
- **Final Approach:**
  - **Calm wind: 54–58 KIAS**
  - **Windy/gusty: +5–10 KIAS buffer**
- **Trim: Adjust to reduce control force**
- **Airbrakes: As required — full on touchdown**

LANDING

- **Flare: Gentle, keep wings level**
- **Touchdown: Main wheel first, nose gently down**
- **Airbrakes: Full after touchdown**
- **Canopy: Open only when stopped**
- **After Landing:**
    - **Release hook safe**
    - **Controls neutral**
    - **Instruments off**

EMERGENCY PROCEDURES

Cable Break (Winch Launch)

- **Nose down immediately to 60–65 KIAS**
- **Turn back only if altitude and conditions allow**
- **Straight ahead landing preferred below 200 ft AGL**

Spin (If Certified)

- **Controls: Neutral**
- **Rudder: Opposite to spin**
- **Hold until rotation stops**
- **Recover: Ease out of dive**

Canopy Open in Flight

- **Maintain control**
- **Land normally — canopy remains partially secure**

Structural Failure or Control Problem

- **Reduce speed to <Vra (108 KIAS)**
- **Prepare for off-field landing**

LIMITATIONS

- **Max Aerotow Speed: 118 KIAS**
- **Max Winch Launch: 75 KIAS**
- **Vne: 151 KIAS**
- **No Water Ballast**
- **Spin-Prohibited: Unless certified and modified accordingly**
- **Flight in Precipitation: Not recommended**
- **Flight in Cloud: Prohibited**

RECOMMENDED PILOT PRACTICES

- **Use airbrakes only as needed — avoid overspeed on descent**
- **Adjust approach speed for conditions (wind/gusts)**
- **Practice coordinated turns — adverse yaw noticeable**
- **Maintain safe airspeed in thermal turns (55–60 KIAS)**
- **Monitor canopy locks and ensure preflight inspection of rear canopy release**
