

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

G1NE
Revision 3
K & L Soaring, LLC
SGM 2-37
November 29, 2010

TYPE CERTIFICATE DATA SHEET NO. G1NE

This data sheet which is a part of type certificate No. G1NE, prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder K & L Soaring, LLC
5996 State Route 224
Cayuta, New York 14824

Type Certificate Holder Record Schweizer Aircraft Corporation
Elmira Corning Regional Airport
P.O. Box 147
Elmira, New York 14902

I - Model SGM 2-37, 2 PCLM, Approved March 22, 1983

Type	Sailplane, utility category (motorglider)		
Engine	Lycoming O-235-L2C (with Slick mags.)		
Fuel	100/130 minimum grade aviation gasoline		
Engine Limits	For all operations, 2600 R.P.M. (112 H.P.)		
Propeller & Propeller Limits	Sensenich 72CK-0-50 (2) bladed, fixed pitch Diameter: 72 in. maximum, 70 in. minimum Static RPM at max. permissible throttle setting: 2450 RPM maximum, 2300 RPM minimum		
Airspeed Limits (CAS)			
	V _S	(Stall)	48 mph (42 kts.)
	V _{SO}	(Stall, dive brakes open)	52 mph (45 kts.)
	V _A	(Maneuvering)	90 mph (78 kts.)
	V _{RA}	(Rough Air)	100 mph (87 kts.)
	V _{NE}	(Never exceed)	135 mph (117 kts.)
	V _{DB}	(Dive brakes open)	135 mph (117 kts.)
C.G. Range	+82.45 (22.6% MAC) to +86.20 (31.7% MAC) at max. gross weight or less.		
Maximum Weight	1850 lb. for aircraft having wing modifications detailed on dwgs. 37401R, 37402R, and 37408R.		
Maximum Baggage	1850 lb. gross weight aircraft: 100 lbs. (+110.00) (20 lbs./sq. ft. maximum)		
No. of Seats	2 (For CG locations see Weight and Balance Section in Pilot's Operating Handbook)		

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Fuel Capacity	1850 lb. gross weight aircraft: 15.6 gal. (1.4 gal. unusable) with single tank in left hand portion of wing center section (+80.30); 31.2 gal. (2.8 gal. unusable) with two 15.6 gal. tanks in wing center section (+80.30)										
Oil Capacity	6 qt., 2 qt. unusable (+19.6) (See Note 1)										
Control Surface Movements	<table border="0"> <tr> <td>Stabilator:</td> <td>Up 19 1/2° (+0, -3°), anti-servo/trim tab up 55.1° +/-3° relative to stabilator Down 9 1/2° (+0°, -3°); anti-servo/trim tab down 30.7° +/-3° relative to stabilator</td> </tr> <tr> <td>Rudder:</td> <td>Left 28° to 30°, Right 28° to 30°</td> </tr> <tr> <td>Aileron:</td> <td>Up 30 1/2° to 33 1/2°, Down 10° to 13°</td> </tr> <tr> <td>Dive Brakes:</td> <td>Upper: Up 87° to 97° Lower: Down 68° to 78°</td> </tr> <tr> <td>Anti-servo trim tab:</td> <td>Up 3.6° (+2°, -0°), Down 16.5° (+2°, -0°), relative to stabilator with stabilator at neutral position</td> </tr> </table>	Stabilator:	Up 19 1/2° (+0, -3°), anti-servo/trim tab up 55.1° +/-3° relative to stabilator Down 9 1/2° (+0°, -3°); anti-servo/trim tab down 30.7° +/-3° relative to stabilator	Rudder:	Left 28° to 30°, Right 28° to 30°	Aileron:	Up 30 1/2° to 33 1/2°, Down 10° to 13°	Dive Brakes:	Upper: Up 87° to 97° Lower: Down 68° to 78°	Anti-servo trim tab:	Up 3.6° (+2°, -0°), Down 16.5° (+2°, -0°), relative to stabilator with stabilator at neutral position
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Serial Nos. Eligible S/N 1 and up

Data Pertinent to All Models

Datum	70.39 inches ahead of wing leading edge at center section (F.S. 0.00)
Mean Aerodynamic Chord	41.38 inches (Leading edge of M.A.C. 73.10 inches aft of datum)
Leveling Means	See Weight & Balance Section in Pilot's Operating Handbook
Certification Basis	<p>FAR 21.23 and in accordance with AC 21.23-1, JAR 22, revised April 1, 1980, plus the additional criteria specified in paragraph 5e(6) of Advisory Circular 21.23-1, dated January 12, 1981, and the following:</p> <p>FAR 23.483 and FAR 23.485, since JAR 22 refers to single centerline wheel landing gear.</p> <p>FAR 23.473 through 23.497, and 23.723 through 23.727, in lieu of JAR 22.473 through 22.497, and 22.721 through 22.725, respectively.</p> <p>FAR 23.221 for normal category airplanes, including a placard prohibiting intentional spins, in lieu of JAR 22.221 and 22.223.</p> <p>A glide ratio not exceeding 10:1 at a speed of 1.3 V_s, in lieu of the value of 7:1 of JAR 22.75.</p> <p>FAR 23, Appendix A, paragraph A 23.11, using the acrobatic load factor of N_z=6, in lieu of JAR 22.423, 22.425, 22.441, and 22.443, for vertical and horizontal tail design.</p> <p>In lieu of JAR 22.71, W/b² in metric units equal to 3 or less, was used as an equivalent method to differentiate powered sailplanes from FAR 23 small airplanes in accordance with AWS-1 memorandum to ANE-170, dated October 5, 1984.</p>
Production Basis	None
Equipment	The basic required equipment as prescribed in the applicable airworthiness requirements (see Certification Basis) must be installed in the aircraft for certification.

NOTE 1. Pilot's Operating Handbook, Report No. 37-17, dated Oct. 5, 1984, Reissue (1), dated March 9, 1988,

including current weight and balance report with list of equipment included in certificated empty weight, and loading instructions when necessary, must be provided for each aircraft at the time of original certification and kept in the aircraft thereafter.

The certificated empty weight and corresponding center of gravity location must include unusable fuel of 8.4 lbs. (+78.00), with a single tank or 16.8 lbs. (+78.80), with two tanks, and system oil of 11.25 lb. (+19.6).

NOTE 2

The following placards must be displayed in locations as indicated:

In full view of the pilot:

EXCEPT AS MAY BE OTHERWISE INDICATED ON A PLACARD, THE MARKINGS AND PLACARDS INSTALLED IN THIS MOTORGLIDER CONTAIN OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS MOTORGLIDER IN THE UTILITY CATEGORY. OTHER OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS MOTORGLIDER IN THIS CATEGORY ARE CONTAINED IN THE PILOTS OPERATING HANDBOOK.

THIS MOTORGLIDER IS APPROVED FOR FLIGHT IN DAY/VFR ONLY. FLIGHT INTO KNOWN ICING CONDITIONS IS PROHIBITED.

In full view of the pilot:

TAKEOFF CHECK LIST

FUEL - ON/QUANTITY	DIVE BRAKES - CLOSED
STATIC DRAIN - CLOSED	TRIM - SET
MIXTURE - RICH	CONTROLS - FREE
ELECTRIC FUEL PUMP - ON	CANOPY - LATCHED
CARBURETOR HEAT - OFF	ALTIMETER - SET
ENGINE GAGES - CHECKED	PARKING BRAKE - OFF
BELTS & HARNESS - FASTENED	

LANDING CHECK LIST

BELTS & HARNESS - FASTENED	TRIM - AS REQUIRED
MIXTURE - RICH	FUEL - ON
ELECTRIC FUEL PUMP - ON	PARKING BRAKE - OFF

In full view of the pilot:

N-NUMBER
FLIGHT LIMITS
&
NORMAL OPERATING SPEEDS

MODEL SGM 2-37	SER. NO.	IAS
NEVER EXCEED SPEED (V_{NE})		136 mph
MANEUVERING SPEED (V_A)		89 mph
ROUGH AIR SPEED (V_{RA})		101 mph
MAX. DIVE BRAKES OPEN		136 mph
MAX. GROSS WEIGHT		1850 lbs
STALL SPEED (BRAKES CLOSED)		53 mph
LANDING APPROACH MINIMUM		66 mph
BEST GLIDE		62 mph
MINIMUM SINK		60 mph
DEMONSTRATED CROSSWIND COMPONENT		17 mph

NOTE 2 (cont)

AEROBATIC MANEUVERS PROHIBITED
 SPINS PROHIBITED
 DAY V.F.R. NON-ICING ONLY
 TIRE PRESSURE
 FOR IN-FLIGHT STARTS AND OTHER CONDITIONS SEE
 PILOTS OPERATING HANDBOOK

35 psi

Above parking brake control:

PARKING BRAKE

TO BE OFF PRIOR TO LANDING.

TO LOCK - PRESS PEDAL, PULL AND HOLD CONTROL.

TO UNLOCK - PRESS PEDAL OR RELEASE CONTROL.

In full view of pilot next to corresponding controls:

For aircraft S/N 1 thru 4 and 6 thru 9:

INCREASE

RICH

THROTTLE

MIXTURE

DECREASE

LEAN

For aircraft S/N 5, 10, & up:

THROTTLE

MIXTURE

PUSH OPEN

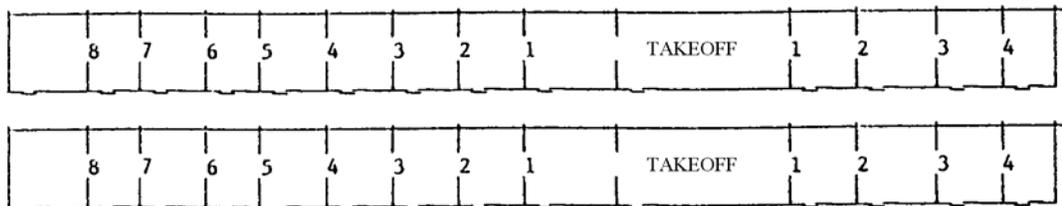
PULL LEAN

On console next to trim wheel:

UP

NOSE
TRIM

DOWN



Adjoining dive brake controls:

OPEN

DIVE
BRAKE

CLOSED



On overhead structure next to latch mechanism:

LOCK

CANOPY
LATCH

UNLOCK



Also on overhead structure is a red canopy latch indicator line.

NOTE 2 (cont)

On instrument panel in full view of pilot:

	FUEL PUMP	MASTER	PRIMER	CABIN HEAT PULL FOR HEAT
MIC.	ON	ON		
JACK	OFF	OFF		

On instrument panel under corresponding breaker:

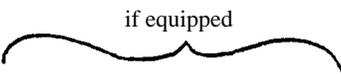
For aircraft S/N 1 thru 4 AND 6 thru 9:

MAIN, ALT., FLD, START, INST., RADIO, FUEL
PUMP

For aircraft S/N 5, 10, & up optional:

MAIN, ALT., FIELD, START, GAUGES, FUEL PUMP, TURN COORD., TRANSPONDER,
RADIO

if equipped



In full view of the pilot, above the fuel indicator gauge(s):

For aircraft having one-tank fuel system:

FUEL REMAINING WHEN THE QUANTITY INDICATOR READS ZERO CANNOT BE USED
SAFELY IN FLIGHT.

14.2 U.S. GAL. USABLE

FUEL GRADE (MIN. OCTANE).....100/130 - GREEN

For aircraft having optional two-tank fuel system:

FUEL REMAINING WHEN THE QUANTITY INDICATORS READ ZERO CANNOT BE USED
SAFELY IN FLIGHT

28.4 U.S. GAL. USABLE

FUEL GRADE (MIN. OCTANE).....100/130 GREEN

In full view of the pilot, below the throttle quadrant:

For aircraft having one tank fuel system:

	FUEL	
ON		OFF

For aircraft having optional two-tank fuel system:

	FUEL	
L		R
	OFF	

NOTE 2 (Cont)

In full view of the pilot, near the carburetor heat control:

For aircraft S/N 1 thru 4 and 6 thru 9:

OFF

CARB.
HEAT

ON

For aircraft S/N 5, 10, and up:

CARB HEAT
PULL ON

In full view of the pilot, above static system drain:

STATIC DRAIN

In baggage compartment:

MAX. BAGGAGE COMPARTMENT LOAD 100 LBS. DISTRIBUTE LOAD AT 20 LBS./SQ. FT. MAX.

Note 3. An approved Safety Belt and shoulder harness is required for each occupant.

Note 4. All SGM 2-37 motorgliders, serial numbers 1 and up, have been modified to a maximum gross weight of 1850 pounds. The pilot's operating Handbook, dated October 5, 1984, and reissued March 9 1988, supersedes all preceding handbooks and is applicable to all SGM 2-37 motorgliders.

...END...