



Charles Alliston

FLAT TOP LAISTER-KAUFFMAN TG 4-A

THE Laister-Kauffmann TG-4a is the military version of the LK-10A, which was developed from the famous Yankee Doodle. 150 of these ships, which had a maximum glide ratio of 22, were delivered to the Air Force.

The Flat Top modification was the idea of Dr. August Raspet, and was first carried out by Gene Miller (*Soaring*, June-July, 1948). The version presented here was developed by the Engineering Research Station of Mississippi State College. It does not realize the maximum performance the LK is capable of: the removal of wheel, tip skids, and substitution of a lower, better streamlined tail skid would result in a noticeable improvement. Among the less evident features of this research sailplane are a hand-rubbed finish, a faired-in main skid, and streamlining behind the wheel. Also, the aileron mass balance weights were removed, as were the aerodynamic balances from the elevator and rudder. (See *Soaring*, January-February, 1950.)

All performance curves and data were obtained from carefully conducted flight tests, carried out at Mississippi State College, and tend toward being conservative.

TABLE OF DATA

MEASUREMENTS (Feet)

Span	50
Length (Overall)	21.5
Height (Overall)	4.80
Fuselage Width (Overall)	3.33
Fuselage Cross-Section Area	5.5

AREAS (Sq. Ft.)

Wing Area (Width Aileron)	16
Aileron (Total)	18
Flaps (Total)	
Spoilers (Total)	2.1
Stabilizer	7.5
Elevator	14.15
Horizontal Area	21.3
Fin	5.62
Rudder	7.60
Vertical Area	13.22

WEIGHTS (Pounds)

Empty	430 lbs.
Pilot	180
Extra Equipment	250
Total	860
Pilot/Empty	0.42

WING

Wing Planform	Taper
Sweepback	0°
Dihedral	4 1/4°
Gull	
Root Chord	56"
Half-Span Chord	39"
Tip Chord	22"
Aspect Ratio	15
Taper Ratio	2.5
Load Factor	

AIRFOIL SECTIONS

Wing Root	4418
Wing Half Span	4413
Wing Tip	4409
Horizontal Tail	NACA Sym.
Vertical Tail	NACA Sym.
Angle of Incidence to Fuselage	4°
Washout	4°
Winch Tow	Yes
Auto Tow	Yes
Airplane Tow	Yes
Aerobatics	Yes

PERFORMANCE

Glide Angle (Maximum)	25.6
Minimum Sink	2.25 ft./sec.
Airspeed at Best Glide Angle	40mph
Airspeed at Best Sink	38mph
Maximum Design Speed	140mph
Wing Loading (Test Flight)	3.60 lbs. lft. 2
Span Loading (Test Flight)	0.24 lbs. lft. 2

CONSTRUCTION AND MATERIALS

Wing	Wood
Fuselage	Steel Tube
Horizontal Tail	Wood
Vertical Tail	Wood
Landing Gear	Wheel 6:00x6 Brake

AERODYNAMIC

CHARACTERISTICS

Min. Drag Coefficient	0.019
Efficiency Factor	90%