THIS DOCUMENT MUST BE KEPT IN AIRPLANE AT ALL TIMES

MOONEY AIRCRAFT, INC. Wichita, Kansas

CAA Appproved, Based on CAR 3 – Normal Category
CAA Identification No. _____ Airplane Serial No. _____ Engine Serial No. _____
Manfactured _____ Type Certificate No. 803

MODEL M-18L AIRPLANE FLIGHT MANUAL (Unofficial Copy)

1. LIMITATIONS: The following limitations are to be observed in the operation of this airplane:
   A. ENGINE: Lycoming Model 0-145-B2. Engine limits: For all operations, 2550 RPM, 65 HP.
   B. FUEL: 80 Minimum Octane Aviation Gasoline, (Usable 11 gallons). One fuselage tank. Fuel remaining in tank when gauge reads zero cannot be used safely in flight (In red band).
   C. PROPELLER: Sensenich Models 66CB-52 to 66CB-54. Static RPM at full throttle: not more than 2085; not less than 1890. No additional tolerance permitted.
   D. POWER PLANT INSTRUMENTS:
      (a) Oil Temperature; Green Arc (Normal Op. Rangs), 100° to 200° F., Red line (Max), 220"F:
      (b) Oil Pressure; Green Arc (Normal Op. Range) 65 to 85 psi.. Red line (Max), 85 psi.. Red line (Min), 25 psi.
      (c) Tachometer; Green Arc 2000-2550 RPM (Normal Op. Range), Red line at 2650 RPM. DO NOT EXCEED.
   E. AIRSPEED LIMITS: (True Indicated Airspeed)

	MARKING	NORMAL CAT.	UTILITY CATEGORY
NEVER EXCEED	RED LINE	143 MPH	143 MPH
CAUTION RANGE	YELLOW ARC	109 - 143 MPH	109 - 143 MPH
NORMAL OP. RANGE	GREEN ARC	52½ - 109 MPH	52½ - 109 MPH
FLAP OP. RANGE	WHITE ARC	45 - 84 MPH	45 - 84 MPH
MAX. STRUCTURAL CRUISING SPEED		109 MPH	109 MPH
MAX. GEAR EXTENDED SPEED		109 MPH	109 MPH
MAX. GEAR OPERATING SPEED		109 MPH	109 MPH
MAX. HATCH OPEN SPEED		109 MPH	109 MPH
MANEUVERING SPEED		103 MPH	109 MPH
FLIGHT LOAD FACTORS:			
MAX. POSITIVE LOAD FACTOR (FLAPS UP)		3.8 G	4.4 G
MAX. NEGATIVE LOAD FACTOR		No inverted Maneuvers Approved	
MAX. WEIGHT		780 lbs.	740 lbs.

DATUM: Front face of lower section of the Firewall. MAC is 43.9" (25.3")
CG FLIGHT ENVELOPE (GEAR EXTENDED):
NORMAL CATEGORY - 695 Ibs to 725 Ibs at 31.7" (14.6% MAC) to 780 lbs at 32.1" (15.5%) to 780 lbs at 33.8" (19.3% MAC). Straight line variation between limits.

UTILITY CATEGORY - 695 to 725 Ibs at 31.7" (14.6% MAC) to 740 lbs at 31.8" (14.8% MAC) to 740 lbs at 32.9" (17.3% MAC). Straight line variation between limits. (Utility Category is not approved for airplanes with electrical equipment installed).
NOTE - It is the responsibility of the airplane owner and the pilot to insure that the airplane is properly loaded, (a) No Acrobatic Maneuvers approved for NORMAL CATEGORY operation, (b) No baggage to be carried in UTILITY CATEGORY operation.

F. MANEUVERS: The following maneuvers are approved for operation in the UTILITY CATEGORY only, with recommended entry speeds shown:

Chandelles	109 MPH TIAS
Lazy Eights	109 MPH TIAS
Steep Turns	109 MPH TIAS
Stalls - Except Whip Stalls	- Use slow deceleration
Spins	Spins are prohibited

Note - Maneuvers involving approach to stalling speed or full application of elevator, rudder, or ailerons should be confined to speeds below maneuvering speed.

G. WING FLAP SETTINGS: Take-off, 0° (Up); Landing, 16½° Down.

H. PLACARDS:

1. On Instrument Panel
   "This airplane must be operated as a NORMAL or UTILITY CATEGORY airplane in compliance with the Approved Flight Manual. All markings and placards on this airplane apply to its operation as a NORMAL CATEGORY airplane. For UTILITY CATEGORY operations refer to the Airplane Flight Manual. No acrobatic maneuvers (including spins) are approved for NORMAL CATEGORY operations."
2. Under Gear Warning Device
   "WARNING - Gear up when signal is in motion or light: flashing" (Light added only to airplanes equipped for night flying)
3. Under Hatch Latch
   "Do not open hatch above 109 MPH."
4. On Baggage Compartment
   "Maximum Baggage Capacity - Normal Category, 40 lbs. Utility Category, 0 lbs."

2. PERFORMANCE

The following performance figures were obtained during Civil Aeronautics Administration type tests and may be realized under conditions indicated with the airplane and engine in good condition and with average piloting technique. All performance is given for 780 lbs weight with no wind and on level paved runways. In using the following data, allowance for actual conditions must be made.

ITEM	ALTITUDE	OUTSIDE AIR TEMPERATURES				
		0°F	25°F	50°F	75°F	100°F
Take-off Distance (in feet)	Sea Level	843	916	987	1075	1147
Distance required to take-off and	2000 ft	1001	1089	1179	1280	1376
climb 50 Ft. Full throttle, 68¼ MPH	4000 ft	1200	1311	1422	1545	1668
TIAS climb speed. Flaps 0°	6000 ft	1453	1590	1732	1889	2046
Landing Distance (in feet)	Sea Level	1115	1156	1200	1242	1285
Distance required to land over 50 ft.	2000 ft	1173	1218	1265	1310	1349
obstacle and stop. Flaps 16½°	4000 ft	1237	1286	1332	1377	1420
down. Approach at 58½ MPH TIAS	6000 ft	1306	1353	1400	1451	1493
Normal Rate of Climb (ft/min).	Sea Level	1139	1120	1100	1073	1050
Gear and Flaps up. 74 TIAS at Sea	2000 ft	1037	1013	991	962	936
Level. Speed decrease 1 MPH	4000 ft	933	908	882	850	826
per 1700 ft. Standard Altitude.	6000 ft	827	800	770	744	716
Balked Landing Climb (ft/min).	Sea Level	986	960	940	921	898
Geardown, Flaps up. 68 MPH TIAS	2000 ft	887	864	841	813	787
at S.L. Speed decrease 1 MPH	4000 ft	786	763	737	707	681
per 1400 ft. Standard Altitude.	6000 ft	685	659	629	603	575
Stalling Speeds MPH	Angle of Bank	0°	20°	40°	50°	60°
TIAS. Power off	Gear & Flaps Up	52½	54	60	66	74
	Gear & Flaps down 16½°	45	46½	51½	56	64