

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

A-803  
Revision 19  
MOONEY  
M-18C  
M-18C55  
M-18L  
M-18LA  
February 1, 1972

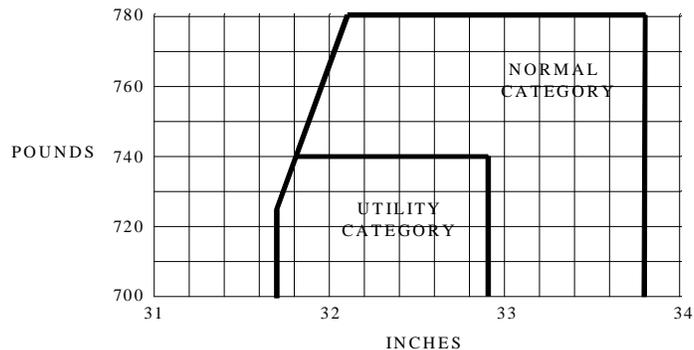
AIRCRAFT SPECIFICATION NO. A-803

Manufacturer Mooney Mite Aircraft Corporation  
Box 3999  
Charlottesville, Virginia 22903

I - Model M-18 - Deleted - April 28, 1950

II - Model M-18L, 1 PCLM (Normal and Utility Category), Approved March 15, 1949

Engine	Lycoming O-145-B2		
Fuel	80 minimum octane aviation gasoline		
Engine limits	For all operations, 2550 r.p.m. (65 hp.)		
Airspeed limits	Maneuvering	103 m.p.h. ( 90 knots)	(Normal Category)
(CAS)		109 m.p.h. ( 95 knots)	(Utility Category)
	Maximum structural cruising	109 m.p.h. ( 95 knots)	
	Never exceed	143 m.p.h. (124 knots)	
	Flaps extended	84 m.p.h. ( 73 knots)	
	Landing gear extended	109 m.p.h. ( 95 knots)	
	Landing gear operation	109 m.p.h. ( 95 knots)	
C.G. range	(With landing gear extended)		
	Normal Category:	(+32.1) to (+33.8) at 780 lb. (+31.7) to (+33.8) at 725 lb. or less	
	Utility Category:	(+31.8) to (+32.9) at 740 lb. (+31.7) to (+32.9) at 725 lb. or less	
	Straight line variation of forward limits between specified weights.		
	Effect of retracting landing gear +266 in.-lb.		
	(Not eligible for Utility Category operation with Items 302, 303 and 304 installed).		



Empty weight C.G. range (+29.9) to (+30.0). When the E.W.C.G. falls within this range, computation of critical fore and aft C.G. positions is unnecessary. Range is not valid for non-standard arrangements.

Normal Category: 780 lb.  
Utility Category: 740 lb.

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No. seats	1 (+34) or (+35) for flat bottom seat		
Maximum baggage	Normal Category:	40 lb. (+51)	
	Utility Category:	None	
Fuel capacity	12 gal. (11 gal. usable) (one tank in fuselage) (+56.7)		
	See NOTE 1 for data on unusable fuel and Item 111 for auxiliary fuel tank.		
Oil capacity	4 qt. (-9.0)		
Control surface movements	Wing flaps	Up 0°	Down 16.5°
	Ailerons	Up 15.5°	Down 7°
	Elevators	Up 25°	Down 13° (stabilizer neutral at 0°)
	Rudder	Right 20°	Left 18°
	Stabilizer (Leading Edge)	Up 2.5°	Down 3.5°
Serial Nos. eligible	2 and up		
Required equipment	In addition to the pertinent required basic equipment specified in CAR 3, the following items of equipment must be installed: 2, 101, 201(c), 202(b), 205(b), 206(b), 401(b), 402. (For night flying, instrument lights or equivalent to provide illumination of all placards and instruments and flasher type landing gear warning light or aural (Horn) warning are required in addition to equipment required by CAR 43).		

### III - Model M-18C, 1 PCLM (Normal Category), Approved April 11, 1950

Engine	Continental A65-12 or -8		
Fuel	80 minimum octane aviation gasoline		
Engine limits	For all operations, 2300 r.p.m. (65 hp.)		
Airspeed limits (CAS)	Maneuvering	107 m.p.h.	( 93 knots)
	Maximum structural cruising	114 m.p.h.	( 99 knots)
	Never exceed	143 m.p.h.	(124 knots)
	Flaps extended	85 m.p.h.	( 74 knots)
	Landing gear extended	109 m.p.h.	( 95 knots)
C.G. range	Landing gear operation	109 m.p.h.	( 95 knots)
	(With landing gear extended)	(+31.1) to (+34.4)	
Empty weight C.G. range	Effect of retracting landing gear	+362 in.-lb.	
		(+28.1) to (+29.3). When the E.W.C.G. falls within this range, computation of critical fore and aft C.G. positions is unnecessary. Range is not valid for non-standard arrangements.	
Maximum weight	850 lb.		
No. seats	1 (+34) or (+35) for flat bottom seat		
Maximum baggage	40 lb. (+51) (with battery): 40 lb. (+51 and 35 lb. (+70) (Standard airplane).		
Fuel capacity	12 gal. (9.6 gal. usable) (One tank in fuselage) (+56.7)		
	(See Item 112 for alternate fuselage tank)		
	See NOTE 1 for data on unusable fuel and Item 111 for auxiliary fuel tank.		
Oil capacity	4 qt. (-4.5)		
Control surface movements	Wing flaps	Up 0°	Down 16.5°
	Ailerons	Up 15.5°	Down 7°
	Elevators	Up 25°	Down 13° (stabilizer neutral at 0°)
	Rudder	Right 23°	Left 18°
	Stabilizer (Leading Edge)	Up 1.5°	Down 3.5°
Serial Nos. eligible	201 and up		
Required equipment	In addition to the pertinent required basic equipment specified in CAR 3, the following items of equipment must be installed: 5, 101, 201(c), 202(b), 205(b), 206(b), 401(e), 402. (For night flying, instrument lights or equivalent to provide illumination of all placards and instruments and flasher type landing gear warning light or aural (Horn) warning are required in addition to equipment required by CAR 43).		

IV - Model M-18LA, 1 PCLM (Normal Category), Approved July 12, 1950

Engine	Lycoming O-145-B2		
Fuel	80 minimum octane aviation gasoline		
Engine limits	For all operations, 2550 r.p.m. (65 hp.)		
Airspeed limits	Maneuvering	107 m.p.h.	( 93 knots)
(CAS)	Maximum structural cruising	114 m.p.h.	( 99 knots)
	Never exceed	143 m.p.h.	(124 knots)
	Flaps extended	85 m.p.h.	( 74 knots)
	Landing gear extended	109 m.p.h.	( 95 knots)
	Landing gear operation	109 m.p.h.	( 95 knots)
C.G. range	(With landing gear extended) (+31.1) to (+34.4)		
	Effect of retracting landing gear +362 in.-lb.		
Empty weight C.G. range	(+28.1) to (+29.3). When the E.W.C.G. falls within this range, computation of critical fore and aft C.G. positions is unnecessary. Range is not valid for non-standard arrangements.		
Maximum weight	850 lb.		
No. seats	1 (+34) or (+35) for flat bottom seat		
Maximum baggage	40 lb. (+51) with battery); 40 lb. (+51) and 35 lb. (+70) (Standard airplane)		
Fuel capacity	12 gal. (11 gal. usable) (one tank in fuselage) (+56.7)		
	(See item 112 for alternate fuselage tank)		
	See NOTE 1 for data on unusable fuel and Item 111 for auxiliary fuel tank.		
Oil capacity	4 qt. (-9.0)		
Control surface movements	Wing flaps	Up 0°	Down 16.5°
	Ailerons	Up 15.5°	Down 7°
	Elevators	Up 25°	Down 13° (stabilizer neutral at 0°)
	Rudder	Right 23°	Left 18°
	Stabilizer (Leading Edge)	Up 1.5°	Down 3.5°
Serial Nos. eligible	100 to 200, inclusive.		
Required equipment	In addition to the pertinent required basic equipment specified in CAR 3, the following items of equipment must be installed: 2, 101, 201(c), 202(b), 205(b), 206(b), 401(f), 402. (For night flying, instrument lights or equivalent to provide illumination of all placards and instruments and flasher type landing gear warning light or aural (Horn) warning are required in addition to equipment required by CAR 43).		

V - Model M-18C 55, 1 PCLM (Normal Category), Approved April 2, 1955.

Engine	Continental A65-12 or -8		
Fuel	80 minimum octane aviation gasoline		
Engine limits	For all operations, 2300 r.p.m. (65 hp.)		
Airspeed limits	Maneuvering	107 m.p.h.	( 93 knots)
(CAS)	Maximum structural cruising	114 m.p.h.	( 99 knots)
	Never exceed	143 m.p.h.	(124 knots)
	Flaps extended	85 m.p.h.	( 74 knots)
	Landing gear extended	109 m.p.h.	( 95 knots)
	Landing gear operation	109 m.p.h.	( 95 knots)
C.G. range	(With landing gear extended) (+31.1) to (+34.4)		
	Effect of retracting landing gear +362 in.-lb.		
Empty weight C.G. range	(+28.1) to (+29.3). When the E.W.C.G. falls within this range, computation of critical fore and aft C.G. positions is unnecessary. Range is not valid for non-standard arrangements.		
Maximum weight	850 lb.		
No. seats	1 (+37)		
Maximum baggage	40 lb. (+51) with battery); 40 lb. (+51) and 35 lb. (+70) (Standard airplane).		
Fuel capacity	13.5 gal. (one tank in fuselage) (+58.7)		
	See NOTE 1 for data on unusable fuel and Item 111 for auxiliary fuel tank.		
Oil capacity	4 qt. (-4.5)		

Control surface movements	Wing flaps	Up 0°	Down 16.5°
	Ailerons	Up 15.5°	Down 7°
	Elevators	Up 25°	Down 13° (stabilizer neutral at 0°)
	Rudder	Right 23°	Left 18°
	Stabilizer (Leading Edge)	Up 1.5°	Down 3.5°
Serial Nos. eligible	323 and up		
Required equipment	In addition to the pertinent required basic equipment specified in CAR 3, the following items of equipment must be installed: 2, 101, 201(c), 202(b), 205(b), 206(b), 401(k). (For night flying, instrument lights or equivalent to provide illumination of all placards and instruments and flasher type landing gear warning light or aural (Horn) warning are required in addition to equipment required by CAR 43).		

#### SPECIFICATIONS PERTINENT TO ALL MODELS

Datum	25.19 in. forward of wing leading edge outboard of fillet.
Leveling means	Right hand engine bearer tube (M-18L and M-18LA); front face of front spar under seat is 90° to level (M-18L, M-18LA, M-18C and M-18C 55)
Certification basis	Type Certificate No. 803 (CAR 3)
Production basis	None. Prior to original certification of each aircraft a FAA Inspector must perform a detailed inspection for workmanship, materials, and conformity with the approved technical data and a check of the flight characteristics.

Equipment: A plus (+) or minus (-) sign preceding the weight of an item indicates net change when that item is installed. "\_\_\_" indicates "Does not apply."  
Approval for the installation of all items of equipment listed herein has been obtained by the aircraft manufacturer except those items preceded by an asterisk (\*). The asterisk denotes that approval has been obtained by someone other than the aircraft manufacturer. An item marked with an asterisk may not have been manufactured under a FAA monitored or approved quality control system.

#### Propellers and Propeller Accessories

		<u>M-18-L</u>	<u>M-18L</u>	<u>M-18LA</u>	<u>M18C 55</u>
1.	Deleted - April 28, 1950				
2.	Propeller-Sensenich 66CB-52 or any other fixed pitch wood propeller which is eligible for the engine power and speed and which meets the following limits: Static r.p.m. at maximum permissible throttle setting: Not over 2085, not under 1890. No additional tolerance permitted. Diameter: Not over 66 in., not under 64.5 in.	10 lb.	(-21.5)	-----	(-21.5) -----
3.	Propeller-Sensenich 60LY44 or 60MY49 or any other fixed pitch wood propeller which is eligible for the engine power and speed and which meets the following limits: Static r.p.m. at maximum permissible throttle setting: Not over 2350, not under 2100. No additional tolerance permitted. Diameter: Not over 60 in., not under 59 in. (Item 401(c) required)	11 lb.	(-21.5)	-----	(-21.5) -----
4.	Propeller-Flottorp 63L60 or 63L56 or any other fixed pitch wood propeller which is eligible for the engine power and speed and which meets the following limits: Static r.p.m. at maximum permissible throttle setting: Not over 2220, not under 1995. No additional tolerance permitted. Diameter: Not over 63 in., not under 62 in. (Item 401(d) required).	8 lb.	(-21.5)	-----	(-21.5) -----
5.	Propeller-Flottorp 65A60 to 66, Sensenich 65CK58 to 62, or any other fixed pitch wood propeller which is eligible for the engine power and speed and which meets the following limits: Static r.p.m. at maximum permissible throttle setting: Not over 2030, not under 1800. No additional tolerance permitted. Diameter: Not over 65 in., not under 63.5 in.	9 lb.	-----	(-23)	----- (-23)

		<u>M-18-L</u>	<u>M-18L</u>	<u>M-18LA</u>	<u>M18C 55</u>
* 6. Propeller-Flottorp Controllable, R002-101 or R003-100 hub with R003-237-65T blades. Static r.p.m. at maximum permissible throttle setting: Not over 2030, not under 1800. Pitch settings at 3/4 sta.: Low - 18.5°, high 25.5° Diameter: Not over 65 in., not under 63.5 in. When this item is installed, Airplane Flight Manual must be revised to list this item and include the statement "With this propeller installed, performance is equal to or better than that shown for the fixed pitch wood propeller."	29 lb.	-----	(-23)	-----	(-23)
<u>Engine and Engine Accessories - Fuel and Oil Systems</u>					
101. Carburetor air heater	1 lb.	(-8.5)	(-10)	(-8.5)	(-10)
102. to 107. Deleted - April 28, 1950					
108. Cabin air heater	1 lb.	(-1.5)	(-6)	(-1.5)	(-6)
109. Nose cowl and baffle (Mooney Dwg. Nos. 811 and 812 respectively) Item No. 109 must be used when electrical system is installed (Mooney Dwg. No. 846).	No wt. change	----	No wt. change	----	----
110. Starter Delco Remy (CMC 50309) Requires No. 2 gauge cable to battery	16 lb.	-----	(+2.5)	-----	(+2.5)
111. 6 gal. aux. fuel tank (Installed in accordance with Mooney Dwg. 1049). Arm of fuel is (+51). When this item is installed in M-18L or M-18LA no baggage is permitted and when installed in M-18C or M-18C 55, baggage in rear compt. only is permitted. See NOTE 1 for data on unusable fuel. (Item 401(g), (h), (i) or (k) required when this item is installed).	5 lb.	(+49.5)	(+49.5)	(+49.5)	(+49.5)
112. 15.5 gal alternate main fuel tank (may be installed in lieu of the standard 12 gal. fuselage tank). See NOTE 1 for data on unusable fuel.	+2 lb.	-----	-----	(+59)	-----
<u>Landing Gear</u>					
201. Two main gear assemblies, Type III					
(a) Goodyear model 15HBM, 5.00-5 Wheel assembly #9520265 Brake assembly #9520264	11 lb.	(+51)	-----	-----	-----
(c) Mooney model W-1, 4.00-4 Wheel-Brake assembly #W-617	11 lb.	(+50)	(+48)	(+48)	(+48)
202. (a) Two main wheel 4-ply tires, 5.00-5, Type III, with regular tubes	12 lb.	(+51)	-----	-----	-----
(b) Two main wheel 6-ply industrial tires, 4.00-4, Type III, with regular tubes	10 lb.	(+50)	(+48)	(+48)	(+48)
(c) Two main wheel 4-ply industrial tires, 4.00-4, Type III, with regular tubes	8 lb.	(+50)	(+48)	(+48)	(+48)
205. One nose wheel, Type III					
(a) Firestone model 5C2M-1, 5.00-5	3 lb.	(0)	-----	-----	-----
(b) Mooney model W-2 wheel assembly W-619, 4.00-4	3 lb.	(+1.5)	(-1)	(-1)	(-1)
206. (a) One nose wheel 4-ply tire, 5.00-4, with regular tube	5 lb.	(0)	-----	-----	-----
(b) One nose wheel 6-ply industrial tire, 4.00-4, Type III, with regular tube	5 lb.	(+1.5)	(-1)	(-1)	(-1)
207. Two main gear doors	4 lb.	(+48)	(+48)	(+48)	(+48)

<u>Electrical Equipment</u>		<u>M-18L</u>	<u>M-18C</u>	<u>M-18LA</u>	<u>M-18C 55</u>
302. Battery and box, Willard SYW-7-3, 6 Volt, 10 Amp. (5 hr. rate)	9 lb.	(+119)	----	(+119)	----
302. Generators, Pearson models					
(a) W-78B, (E-68), 6 volt, 8 amp.	7 lb.	(-15.5)	----	(-15.5)	----
(b) W-148B, 12 volt, 8 amp.	8 lb.	(-15.5)	----	(-15.5)	----
(c) W-612B, 6 volt, 12 amp.	11 lb.	(-14)	----	(-14)	----
(d) W-1210B, 12 volt, 10 amp.	11 lb.	(-14)	----	(-14)	----
(e) W-1515B, 12 volt, 15 amp.	12 lb.	(-13.5)	----	(-13.5)	----
(f) W-1520B, 12 volt, 20 amp.	12 lb.	(-13.5)	----	(-13.5)	----
304. Landing light, General Electric, 4538	1 lb.	(-18.5)	----	(-18.5)	----
305. Battery and box, Reading Models					
(a) S-24, 12 volt, 24 amp. hr.	23 lb.	(+75)	(+75)	(+75)	(+75)
(b) 333L, 6 volt, 33 amp. hr.	15 lb.	(+75)	----	(+75)	----
(c) 324L, 6 volt, 24 amp. hr.	12 lb.	(+75)	----	(+75)	----
(d) S-12, 12 volt, 12 amp. hr.	16 lb.	(+75)	(+75)	(+75)	(+75)
NOTE: only eligible when starter not installed.					
306. Generator, Delco Remy (CMC 40435)	10 lb.	----	(+2.5)	----	(+2.5)
307. Landing light, G.E. 4537	1 lb.	----	(-18.5)	----	----

Interior Equipment

401. CAA Approved Airplane Flight Manual					
(b) Airplane Flight Manual dated 8/12/49		Elig.	----	----	----
(c) Airplane Flight Manual Supplement dated October 31, 1949 (Required with Propeller Item 3)		Elig.	----	----	----
(d) Airplane Flight Manual Supplement dated January 25, 1950 (Required with Propeller Item 4)		Elig.	----	----	----
(e) Airplane Flight Manual dated April 10, 1950		----	Elig.	----	----
(f) Airplane Flight Manual dated July 12, 1950, or Revision No. 1, dated May 14, 1952		----	----	Elig.	----
(g) Airplane Flight Manual Supplement dated June 6, 1950 (Pertinent to 6 gal. aux. fuel tank, Item 111)		---	Elig.	----	Elig.
(h) Airplane Flight Manual Supplement dated June 6, 1950 (Pertinent to 6 gal. aux. fuel tank, Item 111)		Elig.	----	----	----
(i) Airplane Flight Manual Supplement dated July 12, 1950 (Pertinent to 6 gal. aux. fuel tank, Item 111)		----	----	Elig.	----
(j) Airplane Flight Manual Supplement dated July 12, 1950 (Pertinent to propellers, Item 3 & 4)		----	----	Elig.	----
(k) Airplane Flight Manual dated April 10, 1950 and Supplements No. 5 and No. 6 dated April 11, 1955		----	----	----	Elig.
402. Fixed Ballast (as required to balance)		<u>M-18L</u>	<u>M-18C</u>	<u>M-18LA</u>	<u>M-18C 55</u>
(a) Without electrical system installed		0-8½ lb. (+155)	0-3½ lb. (+155)	0-3½ lb. (+155)	----
(b) With electrical system installed		0-2** lb. (+155)	0-3½ lb. (+155)	0-2 lb. (+155)	----
When other than standard tail cone (Mooney Dwg No. 66-1 1/2) is installed, the maximum allowable fixed ballast must be reduced by the following amounts:					
		<u>Tail Cone Installed</u>	<u>Reductions</u>		
		Mooney Dwg. No. 66-2	.5 lb.		
		Mooney Dwg. No. 66-2 1/2	1.0 lb.		
		Mooney Dwg. No. 66-3	1.5 lb.		

\*\*No ballast allowed when air driven generator installed

NOTE 1. Current weight and balance report including list of equipment included in certificated empty weight, and loading instructions when necessary, must be in each aircraft at the time of original certification and at all times thereafter (except in the case of air carrier operators having an approved weight control system).

The certificated weight empty and corresponding center of gravity location must include unusable fuel as follows:

MODEL M-18L:	Unusable Fuel of 7 lb. at (+56.7) (Included in Fuel Capacity).
MODEL M-18LA:	Unusable Fuel of 7 lb. at (+56.7) for 12 gal. fuselage tank; or unusable fuel of 24.8 lb. at (+59) for 15.5 gal. fuselage tank (Included in Fuel Capacity).
MODEL M-18C:	Unusable Fuel of 16 lb. at (+56.7) for 12 gal. fuselage tank; or unusable fuel of 24.8 lb. at (+59) for 15.5 gal. fuselage tank (Included in Fuel Capacity).
MODEL M-18C 55:	No unusable fuel.

NOTE 2. The following placards must be displayed in front of and in clear view of the pilot:

MODEL M-18L: "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."

MODEL M-18C: "THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE M-18LA, WITH THE APPROVED FLIGHT MANUAL."  
and M-18C 55:

"NO ACROBATIC MANEUVERS (INCLUDING SPINS) ARE APPROVED FOR NORMAL CATEGORY OPERATIONS."

"NO SMOKING." (Required when ash tray not installed).

.....END.....