

MOONEY AIRPLANE COMPANY, INC.
LOUIS SCHREINER FIELD
KERRVILLE, TEXAS 78028

FAA APPROVED

AIRPLANE FLIGHT MANUAL SUPPLEMENT

FOR

MOONEY M20M, M20R, M20TN

WITH

51 GALLON CAPACITY USEABLE FUEL
TANK CONFIGURATION INSTALLED

REG. NO. _____

SERIAL NO. _____

MODEL _____

This Supplement must be attached to the FAA Approved Airplane Flight Manual when the 51 Gallon Fuel Tank configuration is installed in accordance with Mooney Drawing Number 210217. The information contained herein supplements and / or replaces the information of the basic Airplane Flight Manual. For Limitations, Procedures and Performance information not contained in this Supplement, consult the basic Airplane Flight Manual.

FAA APPROVED: _____



for

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LOG OF REVISIONS

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NOTE: All changes are indicated by a black vertical line along the left margin.



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SECTION I – GENERAL

DESCRIPTIVE DATA

FUEL

Minimum Fuel Grade (Color) 100 LL (Blue) or 100 Octane (Green)
Total Capacity **108 U. S. Gal. (408.8 liters)**
Usable **102.0 U. S. Gal. (386.1 liters)**



SECTION II - LIMITATIONS

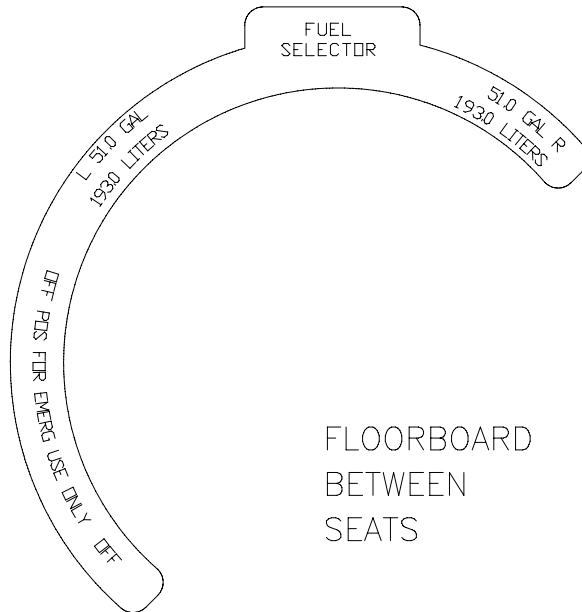
FUEL LIMITATIONS

Standard Tanks (2) 54.0 U. S. Gal. Each (204.4 liters)
Total Fuel Capacity 108 U. S. Gal. (408.8 liters)
Usable Fuel : 102.0 U. S. Gal. (386.1 liters)
Unusable Fuel : 6.0 U. S. Gal. (22.7 liters)
Fuel Grade (and color) : 100 LL (low lead) (blue) or 100 Octane (green) is approved

DECALS AND PLACARDS

CABIN INTERIOR

FUSELAGE EXTERIOR



FUEL – 100 (GREEN) OR
100 LL (BLUE) MIN OCT.
51.0 U. S. GAL. USABLE
193.0 LITERS USABLE

ON BOTH FILLER CAPS

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SECTION III – EMERGENCY PROCEDURES

SECTION IV – NORMAL PROCEDURES

No Changes to Section III and Section IV.

SECTION V – PERFORMANCE

M20M -- BRAVO

INCREASE RANGE AND ENDURANCE BY 3.9 %:

M20R – OVATION 2

INCREASE RANGE AND ENDURANCE BY 5.2 %:

M20TN – ACCLAIM

INCREASE RANGE AND ENDURANCE BY 5.2 %:

SECTION VI – WEIGHT AND BALANCE

AIRPLANE WEIGHING PROCEDURE

(A) LEVELING: Place a spirit level on the leveling screws above the tailcone left access door when leveling the aircraft longitudinally. Level the aircraft by increasing or decreasing air pressure in the nose wheel tire.

(B) WEIGHING: To weigh the aircraft, select a level work area and:

1. Check for installation of all equipment as listed in the Weight & Balance Record Equipment List.

2. Top off both wing tanks with full fuel. Subtract usable fuel, **102.0 U.S. gals. (386.1 liters)** @ 5.82 lb/gal(100LL) (.69 Kg/l) =**593.6 lbs. (266.4 Kgs.)**, from total weight as weighed.

_____*



M20M – BRAVO PROBLEM FORM

M20M PROBLEM FORM – 51 GALLON TANKS						
STEP	ITEM	SAMPLE PROBLEM			YOUR PROBLEM	
		WEIGHT (Kg) Lbs	MOMENT (Kg-cm /1000)	lb-in /1000	WEIGHT (Kg) Lbs	MOMENT (Kg-cm /1000)
1.	A/C Basic Empty Wt.(W)(from page 6-5) (Includes Full Oil) 10 Qts.(9.5 Li) @1.875lbs /Qt.(.80 Kg/Li)(Sta. -20.19)(-51.3 cm) (Oil sump assumed FULL for all flights)	(1009) 2225	(114.6)	99.46		
2.	Pilot Seat (#1) *	(77.1) 170	(7.64)	(AFT POS) 6.63		
	Co-Pilot Seat (#2) *	(77.1) 170	(7.25)	(2nd pos) 6.29		
3.	Left Rear Seat (#3) or Cargo Area	(77.1) 170	(14.3)	12.41		
	Right Rear Seat (#4) or Cargo Area	(77.1) 170	(14.3)	12.41		
4	Fuel (Max. Usable – 102.0 Gal/593.6 Lbs) (386.1 Li/266.4Kg) @ Sta 49.23(125 cm)	(164.7) 363	20.59	17.87		
5.	Baggage (Max. 120 Lbs(54.4 cm)@Sta.101.5 (257.8 cm)	(45.4) 100	11.70	10.15		
	Hat Rack (Max. 10 Lbs(4.54 Kg)@Sta. 131.0 (332.7 cm)					
6.	Loaded A/C Weight(Takeoff at Max. Weight) A/C will have to burn off 168 lbs. fuel before normal landing is accomplished.	(1528) 3368	(190.2)	165.0		
7.	Required Fuel Burn-Off 28 Gals (105.9 Li) @ 6 Lbs./Gal.	(76.2) 168	(-9.53)	-8.27		
8.	MAXIMUM LANDING WEIGHT of A/C	(1452) 3200	(180.6)	156.7		
9.	Refer to Center of Gravity Moment Envelope, to determine whether your A/C loading is acceptable. CAUTION-DO NOT LAND A/C WHEN OVER 3200 LBS EXCEPT IN AN EMERGENCY SITUATION.					
*	Obtain the moment/1000 value for each seat position (FWD, MID or AFT) from loading computation graph.					

M-PRBFRM-51gallons



M20R – OVATION 2 PROBLEM FORM

■ M20TN – ACCLAIM PROBLEM FORM

PROBLEM FORM – 51 GALLON TANKS					
STEP	ITEM	SAMPLE PROBLEM		YOUR PROBLEM	
		WEIGHT (Kg) Lbs	MOMENT (Kg-cm /1000) lb-in /1000	WEIGHT (Kg) Lbs	MOMENT (Kg-cm /1000) lb-in /1000
1.	A/C Basic Empty Wt.(W)(from page 6-5) (Includes Full Oil) 8 Qts.(7.57 Li) @1.875lbs /Qt.(.80 Kg/Li)(Sta. -20.19)(-51.3 cm) (Oil sump assumed FULL for all flights)	(1009) 2225	(114.6) 99.46		
2.	Pilot Seat (#1) *	(77.1) 170	(7.64) (aft pos) 6.63		
	Co-Pilot Seat (#2) *	(77.1) 170	(7.25) (2nd. pos) 6.29		
3.	Left Rear Seat (#3) or Cargo Area	(77.1) 170	(14.3) 12.41		
	Right Rear Seat (#4) or Cargo Area	(77.1) 170	(14.3) 12.41		
4	Fuel (Max. Usable – 102.0 Gal/593.6 Lbs) (386.1 Li/266.4Kg) @ Sta 49.23(125 cm)	(164.7) 363	(20.59) 17.87		
5.	Baggage (Max. 120 Lbs(54.4 cm)@Sta.101.5 (257.8 cm)	(45.4) 100	(11.70) 10.15		
	Hat Rack (Max. 10 Lbs(4.54 Kg)@Sta. 126.0 (320 cm)				
6.	Loaded A/C Weight(Takeoff at Max. Weight) A/C will have to burn off 186 lbs. fuel before normal landing is accomplished.	(1528) 3368	(190.2) 165.0		
7.	Required Fuel Burn-Off 32 Gals (121 Li) @ 5.82 Lbs./Gal.	(84.3) 186	(-9.53) -8.27		
8.	MAXIMUM LANDING WEIGHT of A/C	(1452) 3200	(180.6) 156.7		
9.	Refer to Center of Gravity Moment Envelope, to determine whether your A/C loading is acceptable. CAUTION-DO NOT LAND A/C WHEN OVER 3200 LBS EXCEPT IN AN EMERGENCY SITUATION.				
*	Obtain the moment/1000 value for each seat position (FWD, MID or AFT) from loading computation graph.				

PRBFRM-51 GAL



SECTION VII – AIRPLANE AND SYSTEM DESCRIPTION

FUEL SYSTEM

Fuel is carried in two integrally sealed sections of the forward, inboard area of wing. Total usable fuel capacity is **102 U.S. gallons (386.1 liters)**. There are sump drains at the lowest point in each tank for taking fuel samples to check for sediment contamination or condensed water accumulation.

SECTION VIII – HANDLING AND SERVICING

SERVICING

REFUELING

Integrally sealed tanks, in forward, inboard sections of wing (LH & RH), carry the standard fuel quantity. With aircraft positioned on level ground, service each fuel tank after flight with 100 octane or 100LL aviation grade gasoline. **The fuel tank stand pipe is marked at the bottom edge to show that 44.5 gal (168.45 li) is contained in the tank. An additional 5.6 gallons of fuel may be added up to the mark at the top of the wedge shaped slot in the stand pipe for a total of 51.0 gallons (193.0 li.) in each tank.**

SECTION IX – SUPPLEMENTAL DATA

SECTION X – SAFETY TIPS

No changes to Section IX or Section X.

