

WEIGHT & BALANCE RECORD  
MOONEY STATESMAN  
MODEL M20G

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**WEIGHT & BALANCE RECORD  
MOONEY STATESMAN  
MODEL M20G**

**INTRODUCTION**

The FAA charges you, the aircraft owner or pilot, with the responsibility of properly loading your aircraft for safe flight. Data presented in this document will enable you to carry out this responsibility and insure that your airplane is loaded to operate within the prescribed weight and center-of-gravity limitations.

FAA regulations also require that any change in the original equipment affecting the empty weight center of gravity be recorded in the Aircraft Log Book. A form for maintaining a permanent record of all such changes is provided on page 3-1. This form, if properly maintained, will enable you to determine the current weight-and-balance status of the airplane for load scheduling. The weight-and-balance data entered as your aircraft left the factory, plus the record you maintain on page 3-1, is all of the data needed to compute loading schedules.

The maximum certificated gross weight for the Mooney STATESMAN under all operating conditions is 2525 pounds. Maximum useful load is determined by subtracting the corrected aircraft empty weight from its maximum gross weight. The STATESMAN must be operated strictly within the limits of the Center-of-Gravity Moment Envelope shown on page 2-3.

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**SECTION I. EQUIPMENT LIST AND CORRECTED EMPTY WEIGHT DATA**

**EQUIPMENT CHECKLIST**

The equipment checked below was factory installed and is included in the original or basic empty weight of the aircraft.

FAA Registration No. \_\_\_\_\_

M20G Serial No. \_\_\_\_\_

DATE  
INSPECTED

MO

DAY

YR.


FED. A/C SPEC. 2A3 ITEM NO.	ITEM DESCRIPTION	WEIGHT	ARM	MARK ITEMS INSTALLED			
04	Constant-Speed Propeller, Hartzell Hub (HC-C2YK-1) with (7666-2) Blades	53.75	- 35.16	x			
	Hartzell Spinner (835-20)	3.25	- 34.18	x			
	Garwin Governor	2.75	- 1.40	x			
101	Fuel Pumps:						
	Engine Driven, AC	1.50	+ 1.20	x			
	Electric, Dukes	1.91	- 6.50	x			
102	Oil Radiator, Stewart War.	2.80	- 18.00	x			
103	Induction Air Filter, Air Maze	1.00	- 17.00	x			
104	Starter, Prestolite	17.80	- 18.00	x			
201	Main Wheel & Brake Assys	15.40		x			
202	Main Wheel Tires (6.00 x 6)	17.00		x			
205	Nose Wheel (5.00 x 5)	2.60		x			
206	Nose Wheel Tire & Tube	7.00		x			
301	Alternator, 60 AMP	10.30	- 24.50	x			
302	Battery, 35 AMP HR	28.10	+ 2.50	x			
303	Voltage Regulator, Oeco	1.44	+ 7.00	x			
601	Stall Warning Indicator	.07	+ 50.00	x			
	Gear Warning Indicator	.12	+ 50.00	x			
602	Vacuum System	6.35	- 7.35	x			
603	Instruments:						
	Horizon Gyro	1.80	+ 14.00				
	Directional Gyro	2.00	+ 15.00				
	Clock	.40	+ 25.50				
	Gage OAT	.20	+ 28.00				
	Indicator, Rate-of-Climb	1.00	+ 22.30				
	Turn Coordinator	2.90	+ 21.50	x			
604	Cigarette Lighter	.20	+ 21.00	x			

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**EQUIPMENT CHECKLIST (Continued)**

FAA Registration No. \_\_\_\_\_  
M20G Serial No. \_\_\_\_\_

DATE  
INSPECTED

MO  
DAY  
YR.


EQUIP. ITEM NO.	ITEM DESCRIPTION	WEIGHT	ARM	MARK ITEMS INSTALLED			
605	Anticollision Light	1.88	+163.00				
606	Controls, Dual	3.50	+ 14.00	x			
607	P.C. System, Brittain	7.10	+ 46.60	x			
608	Heated Pitot	.70	+ 38.00				
609	Exhaust Gas Temp. Ind.	1.10	+ 17.71				
610	Fuel, Full		+ 48.43				
611	Oil (2 GAL)	15.00	- 7.40				

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**EQUIPMENT INSTALLED OR REMOVED AFTER BASIC WEIGHT & BALANCE**

The equipment listed below was factory installed or removed after basic weight and balance of the aircraft.

FAA Registration No. \_\_\_\_\_

M20G Serial No. \_\_\_\_\_

ITEM NO.	ITEM DESCRIPTION	WEIGHT	ARM	MOMENT
1	Oil ( 2 GAL )	- 15.00	- 12.40	+186.00
2	Fuel ( Full )		48.43	
	Weight and Moment Added or Subtracted			

**CORRECTED EMPTY WEIGHT AS DELIVERED**

	WEIGHT	ARM	MOMENT	USEFUL LOAD
Aircraft Empty Weight as Weighed				
Weight Added or Subtracted				
Corrected Empty Weight and CG (Gear Extended) as Delivered From Factory				
<small>Transfer these figures to page 3-1.</small>				



**WEIGHT & BALANCE RECORD  
MOONEY STATESMAN  
MODEL M20G****SECTION II. PILOTS LOADING GUIDE****LOADING CALCULATION PROCEDURE**

Proper loading of the aircraft is essential for maximum flight performance and safety. This section will assist you in determining whether the aircraft loading schedule is within the approved weight and center-of-gravity limits.

To figure an actual loading problem for your STATESMAN proceed as follows:

**Step 1.** Refer to the latest entry on page 3-1 for the current empty weight and moment.

**NOTE:** Since the engine oil is normally kept at the full level, use the oil weight and moment figures shown in the sample problems as constants in calculating all loading problems.

**Step 2.** Note the pilot's weight and the position his seat will occupy in flight. Find this weight on the left scale of the Loading Computation Graph (page 2-3) and cross the graph horizontally to the point representing the pilot's seat position between the FWD and AFT position lines on the graph for #1 and #2 seats. When this point is located, drop down to the bottom scale to find the value of the moment/1000 due to the pilot's weight and seat position.

Repeat the procedure for the copilot and enter these weights and moment/1000 values in the proper subcolumns in the Problem Form on page 2-2.

**Step 3.** Proceed as in Step 2 to account for the passengers in seats 3 and 4. Enter the weight and value of moment/1000 in the proper columns.

**Step 4.** Again proceed as in Step 2 to account for the amount of fuel carried, and enter the weight and moment/1000 values in the proper columns.

**Step 5.** Once more proceed as in Step 2 to account for the baggage to be carried and enter the figures in the proper columns.

**Step 6.** Total the weight columns. This total must be 2525 pounds or less. Total the Moment/1000 column. Do not forget to subtract negative numbers.

**Step 7.** Refer to the Center-of-Gravity Moment Envelope (page 2-3). Locate the loaded weight of your airplane on the left scale of the graph and trace a line horizontally to the right. Locate the total moment/1000 value for your airplane on the bottom scale of the graph and trace a line vertically above this point until the horizontal line for weight is intersected. If the point of intersection is within the shaded area, your aircraft loading is acceptable. If the point of intersection falls outside the shaded area, you must rearrange the load before takeoff.

**WEIGHT & BALANCE RECORD  
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PROBLEM FORM FAA Registration No. \_\_\_\_\_

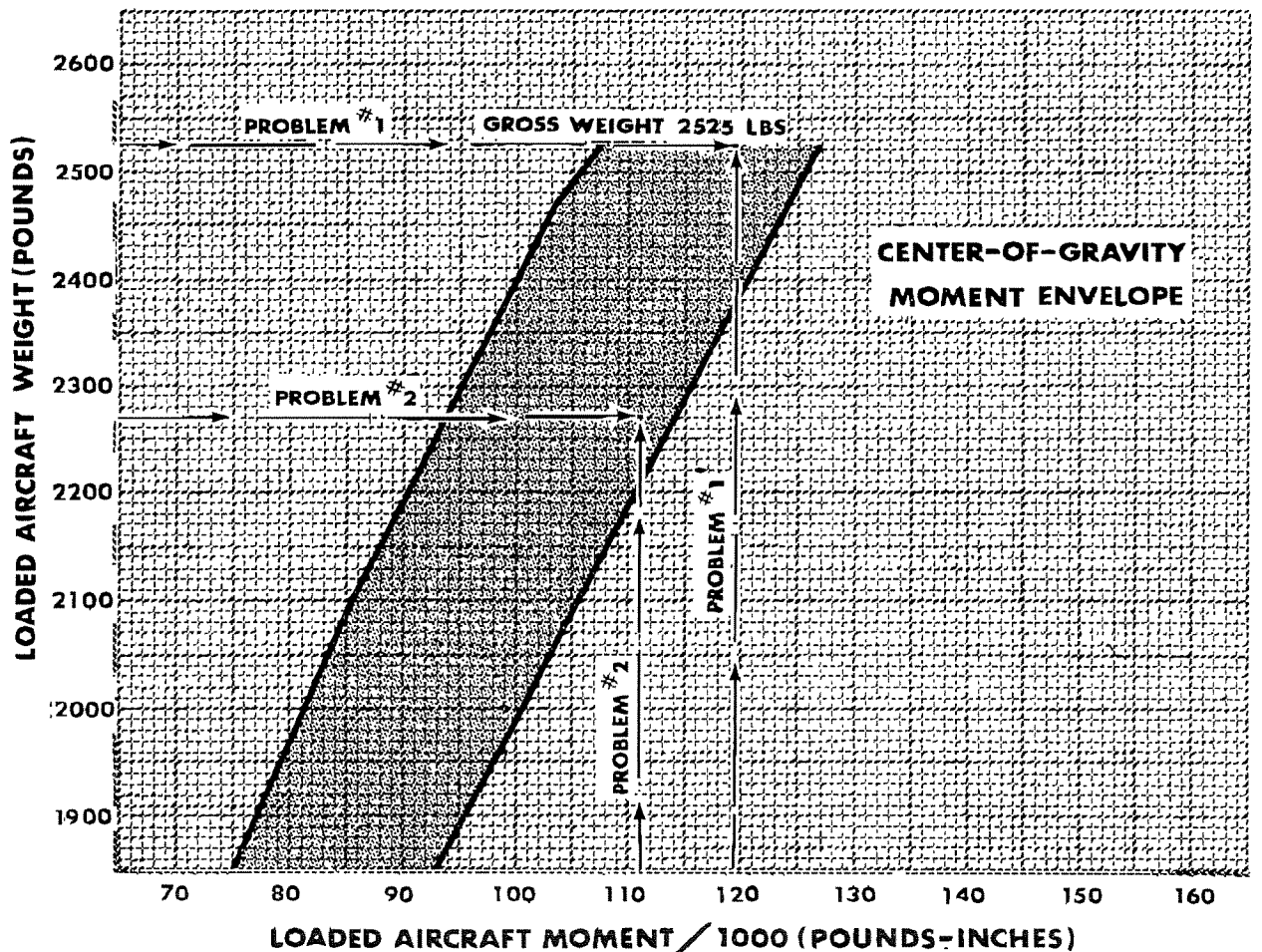
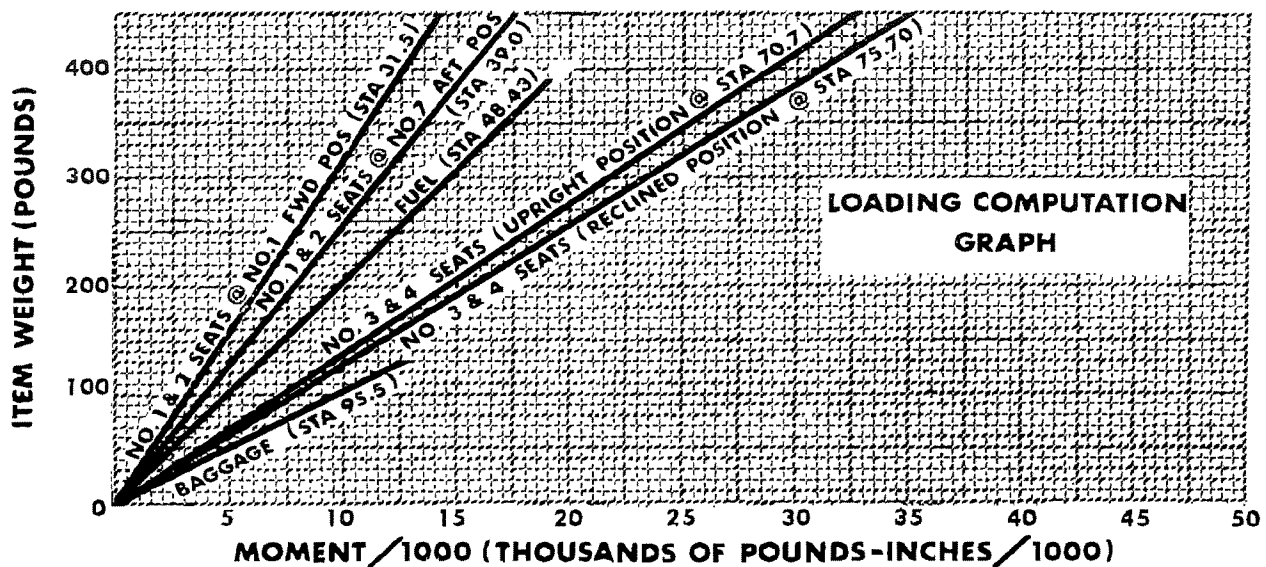
M20G Serial No. \_\_\_\_\_

STEP	ITEM	SAMPLE PROBLEM #1 PILOT & THREE PASS. (Seats Fwd. Position)		SAMPLE PROBLEM #2 PILOT & ONE PASS. (Seats Aft Position)		YOUR PROBLEM	
		WEIGHT (POUNDS)	MOMENT 1000	WEIGHT (POUNDS)	MOMENT 1000	WEIGHT (POUNDS)	MOMENT 1000
1	Current Aircraft Empty Weight (From Page 3-1)	1593.0	70.14	1593.0	70.14		
	Oil--8 QT @ 1.875 LBS/QT (Sump assumed full for all flights)	15.0	-.19	15.0	-.19		
2	Pilot Seat (#1)*	170.0	5.35	170.0	6.63		
	Co-pilot Seat (#2)*	170.0	5.35	170.0	6.63		
3	Left Rear Seat (#3)*	170.0	13.09	--	--		
	Right Rear Seat (#4)*	170.0	13.09	--	--		
4	Fuel (No. GAL x 6 LBS GAL) (MAX 52 GAL 312 LBS)	210.0	10.17	312.0	15.11		
5	Baggage (MAX 120 LBS)	27.0	2.58	120.0	11.46		
	Hat Rack (MAX 10 LBS)			10.0	1.19		
6	Loaded Aircraft Weight	2525.0		2270.0			
	Total Moment/1000		119.58		110.97		
7	Refer to page 2-3, Center-of-Gravity Moment Envelope, to determine whether your aircraft loading is acceptable. (The hat rack arm station is 119.0; the fuel arm station is 48.43; and the oil arm station is - 12.4)						

\*Obtain the moment/1000 value for each position (FWD, MID, or AFT) from page 2-3.



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**SECTION III. OWNERS WEIGHT & BALANCE RECORD**

**CORRECTED EMPTY WEIGHT & MOMENT (CG)**

Enter below all weight change data from the Aircraft Log Book.

FAA Registration No. \_\_\_\_\_

M20G Serial No. \_\_\_\_\_

EMPTY WEIGHT	ARM	<u>MOMENT</u> 1000	USEFUL LOAD	DATE AND SOURCE OF INFORMATION

MOONEY CORPORATION  
Engineering Flight Test

WEIGHT AND BALANCE

MODEL \_\_\_\_\_ SERIAL NUMBER \_\_\_\_\_ DATE \_\_\_\_\_

LOADED AS FOLLOWS

\_\_\_\_\_

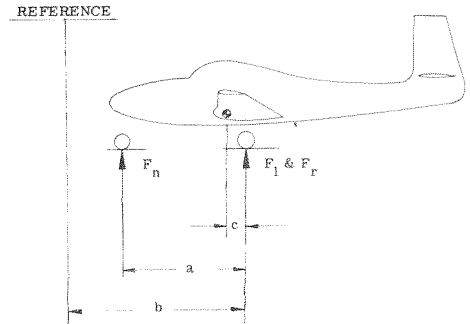
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



(F<sub>r</sub>) Weight - Right Main Wheel = \_\_\_\_\_ lbs.

(F<sub>l</sub>) Weight - Left Main Wheel = \_\_\_\_\_ lbs.

(F<sub>n</sub>) Weight - Nose Wheel = \_\_\_\_\_ lbs.

(F<sub>t</sub>) Total Weight of Aircraft =                      LBS

(a) Distance - Nose Wheel C to Main Wheel C = \_\_\_\_\_ inches

(b) Distance - Reference to Main Wheel C = \_\_\_\_\_ inches

(c) C.G. Location =  $\frac{(F_n)(a)}{(F_t)}$  =  $\frac{(\quad)(\quad)}{(\quad)}$

= \_\_\_\_\_ inches from  
main wheels

(d) Fuselage Station of Reference = \_\_\_\_\_ inches

Fuselage Station of C.G. = (b) - (c) + (d) = \_\_\_\_\_ inches

=                      % MAC