

F.A.A. APPROVED

AIRPLANE FLIGHT MANUAL

MOONEY MARK 20C

MOONEY AIRCRAFT, INC.

Louis Schreiner Field - Kerrville, Texas

Serial No. 2394

Registration No. N6667U

APPROVED H. H. Slaughter

Chief, Engineering & Mfg. Branch
Federal Aviation Agency
Southwest Region

DATE OF APPROVAL 20 OCT '61

Approved _____

Date _____
First Revision

F O R E W O R D

This Manual has been prepared for the guidance of flight personnel who operate the Mooney Mark 20C. It is hoped that all pilots will read the Manual thoroughly and use it as a ready reference.

It should be pointed out that the limitations in the Manual are mandatory and that the Manual must be kept in the airplane at all times.

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LOG OF REVISIONS

Revisions

Date

FAA Approval

8-10-62

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MOONEY M-20C
 FLIGHT MANUAL
 MOONEY AIRCRAFT, INC. OPERATING LIMITATIONS

PAGE 1

Engine

Engine - Lycoming Model O-360-A1B
 Lycoming Model O-360-A1A
 Limit for all operations - 2800 RPM, 180 HP
 No windmilling operation above 2000 RPM to 2250 RPM
 Maximum allowable cylinder head temperature - 500 Degrees F.

LOG OF REVISIONS

<u>Revision</u>	<u>Page</u>	<u>Date</u>	<u>FAA Approval</u>
A	4	8-10-62	<i>J.D. Leloy</i>
B	1	11-9-62	

Aviation Gasoline, 48 Gal. Use Capacity;
 2 gal. each tank.
 Mixture required for prolonged W/C cover operation at
 1000 RPM.
 Electric Fuel Pump Provided (Use for take-off only)
 Oil - 5 Quart Capacity
 Maximum allowable Oil Temperature 245 Degrees F.
 Propeller - Hartzell
 Model HC-C57R-1
 Blades 7600-2
 Diameter 74 inches
 Propeller - McCauley
 Model 3034C53-A
 Model 74E-3
 Diameter 74 inches

Staff warning indicator is inoperative with master switch off.

OPERATING LIMITATIONS

Power Plant Limitations

Engine - Lycoming Model O-360-A1D
Lycoming Model O-360-A1A
Limit for all Operations - 2700 RPM, 180 HP
No continuous operation in the range of 2000 RPM to 2250 RPM
Maximum Allowable Cylinder Head Temperature - 500 Degrees F.

Fuel - 91/96 Octane Aviation Gasoline, 48 Gal. Usable Capacity;
24 gal. each tank.
Full Rich Mixture required for prolonged M/C power operation at
S/L in climb.
Auxiliary Electric Fuel Pump Provided (Use for take-off and landing)

Oil - 8 Quart Capacity
Maximum Allowable Oil Temperature 245 Degrees F.

Propeller - Hartzell
Hub HC-C2YK-1
Blades 7666-2
Diameter 74 inches

Propeller - McCauley
Hub 2D34C53-A
Blades 74E-0
Diameter 74 inches

Stall warning indicator is inoperative with master switch off.

Airspeed Limitations

Never Exceed Speed	189 MPH C.A.S.
Maximum Structural Cruising Speed	150 MPH C.A.S.
Maximum Maneuvering Speed	132 MPH C.A.S.
Maximum Gear Operating Speed	120 MPH C.A.S.
Maximum Gear Extended Speed	120 MPH C.A.S.
Maximum Flap Operating Speed	100 MPH C.A.S.

Instrument Dial Markings

Airspeed Serial No. 1852, 1940 and on

- Radial Red Line - 189 MPH
(Never Exceed Speed Which is the Maximum Safe Airspeed)
- Yellow Arc - 150 to 189 MPH
(Denotes Range of Speeds in Which Operations Should Be Conducted with Caution and Only in Smooth Air)
- Green Arc - 70 to 150 MPH
(Denotes Normal Operating Speed Range)
- White Arc - 63 to 100 MPH
(Denotes Speed Range in Which Flaps May be Safely Lowered)

Tachometer Serial No. 1852, 1940 and on

- Radial Red Line (Rated) 2700 RPM
- Green Arc - Narrow (Rated Operating Range) 2300 to 2700 RPM
- Green arc - Wide (Recommended Operating Range) 2300 to 2500 RPM
- Red Arc - Narrow (No Continuous Operation in this Range) 2000 to 2250 RPM

Cylinder Head Temperature Serial No. 1852, 1940 and on

- Radial Red Line (Maximum) 500 Degrees F.
- Green Arc (Operating Range) 350 to 500 Degrees F.

Oil Pressure Serial No. 1852, 1940 and on

- Radial Red Line (Minimum) 60 PSI
- Radial Red Line (Maximum) 85 PSI
- Green Arc (Operating Range) 60 to 85 PSI

Turn & Bank Voltmeter Serial No. 1852, 1940 & on

Red radial line (minimum)	10 volts
Green arc (operating range)	10 to 14 volts

Vacuum Warning Lights in Artificial Horizon

"High" light	5.0 inches of Hg.
"Low" light	3.5 inches of Hg.

Flight Test Results

Positive Load Factor - 3.8
 Negative Load Factor - No inverted maneuvers approved

Weight and Center of Gravity Limitations

Maximum Weight - 2575 pounds
 Center of Gravity
 Max Forward - 42 inches (15% MAC) Gear Down, 2100 Pounds
 Forward Limit - 45.7 inches (22.6% MAC) Gear Down, 2575 Pounds
 Max Aft - 49.0 inches (26.8% MAC) Gear Down, 2575 Pounds

Center of Gravity - Center Line of Nose Gear Attachment Bolts. (Airplane Sta. 0)
 37 inches Forward of Wing Leading Edge at Wing Sta. 99.25.
 (Innermost Edge of Stall Strip)

Weight: See Weight and Balance Section for Loading Schedules
 Note: The front seat positions can adversely affect C.G. Limitations at most rearward loading. Allowable baggage weight dictated by seat positions.

Remarks

- (1) This airplane must be operated as a Normal Category Airplane in accordance with the approved Airplane Flight Manual. All acrobatics, maneuvers, including spins, are prohibited.
- (2) Maximum Speed, Landing Gear Extended - 120 MPH
- (3) Maximum Speed for Operation of Landing Gear - 120 MPH
- (4) (On Store Window) Do Not Open Above 150 MPH
- (5) Load in accordance with Loading Schedule
- (6) Maximum Baggage Limit - 120 Pounds
- (7) Seal Flap - Pull To Open - Do Not Open Above 150 MPH
- (8) In Case of Engine Fire Turn Cabin Heater OFF
- (9) Pull To Retract Flaps
- (10) Retract Flaps After Landing
- (11) Maximum Weight Not to Exceed 10 Pounds in This Compartment. See Aircraft Loading Schedule Data for Baggage Compartment Allowance.

General

Landing gear stall speed component is more than 17 MPH not recommended.

Rev. (A) dated August 10, 1962

Fuel Pressure

Radial Red Line (Minimum)	0.5 PSI
Radial Red Line (Maximum)	6.0 PSI
Green Arc-Wide (Desired Range)	2.5 to 3.5 PSI
Green Arc-Narrow (Normal Operating Range)	.5 to 6.0 PSI

Oil Temperature

Radial Red Line (Maximum)	245 Degrees F.
Green Arc (Operating Range)	100 to 245 Degrees F.

Flight Load Factors

Maximum Positive Load Factors - 3.8
Maximum Negative Load Factory - No inverted maneuvers approved

Gross Weight and Center of Gravity Limitations

Maximum Weight - 2575 pounds
Center of Gravity
Most Forward -- 42 Inches (15% MAC) Gear Down, 2100 Pounds
Forward Gross - 46.5 Inches (22.6% MAC) Gear Down, 2575 Pounds
Rear Gross - 49.0 Inches (26.8% MAC) Gear Down, 2575 Pounds

Datum - Center Line of Nose Gear Attachment Bolts. (Airplane Sta. 0)
33 Inches Forward of Wing Leading Edge at Wing Sta. 59.25.
(Inboard Edge of Stall Strip)

Warning: See Weight and Balance Section for Loading Schedule
Note: The front seat positions can adversely effect C.G. limitations at most rearward loading. Allowable baggage weight dictated by seat positions.

Placards

- (1) This Airplane Must Be Operated As A Normal Category Airplane In Compliance With The Approved Airplane Flight Manual. All Acrobatics, Maneuvers, Including Spins, Are Prohibited.
- (2) Maximum Speed, Landing Gear Extended - 120 MPH
Maximum Speed for Operation Of Landing Gear - 120 MPH
- (3) (On Storm Window) Do Not Open Above 150 MPH
- (4) Load In Accordance With Loading Schedule
Maximum Baggage Limit - 120 Pounds
- (5) Cowl Flap-Pull To Open-Do Not Open Above 150 MPH
- (6) In Case of Engine Fire Turn Cabin Heater OFF
- (7) Pull To Retract Flaps
- (8) Retract Flaps After Landing
- (9) WARNING: Do Not Exceed 10 Pounds in This Compartment. See Aircraft Loading Schedule Data for Baggage Compartment Allowable.

General

Landings when 90° crosswind component is more than 17 MPH not recommended.

OPERATING PROCEDURESPre-Flight

Check Oil (6 Qts. Minimum)
Check Fuel & Secure Filler Caps
Drain Gascolator and 3 Quick Drains
Inspect Airplane for Defects

Starting

Check to Assure Gear is LOCKED
Fasten Seat Belts
Fuel Valve ON (Right or Left Main)
Master Switch ON
Mixture Rich
Auxiliary Fuel Pump ON for Pressure Build Up, Then OFF
Brakes Set
Clear Prop Visually & Verbally
Pump Throttle to Prime
Engage Starter-Return Magneto Switch to Both After Start
Check Oil Pressure After Engine Starts
Open Cowl Flaps

Take-Off

Check Controls for Freedom and Proper Operation
Check Fuel Quantity & Pressure Gauges
Check Instruments
Set Trim to Take-off Position
Check Cowl Flaps
Set Wing Flaps to 15°
Turn ON Auxiliary Fuel Pump
Check Mags at 1500 RPM
Check Carb. Heat-Return to OFF
Check Governor & Prop Operation at 2200 RPM
Governor Control Full Forward
Secure Window & Door
Apply Full Throttle

After Take-Off

Gear UP
Initial Climb-out at 95 MPH (Minimum Speed for Cooling and Speed
for Best R/C at Sea Level with Gear Up and Flaps in Take-off Position)
Turn OFF Auxiliary Fuel Pump
Normal Cruise 2400 PRM and 24" Manifold Pressure
Close Cowl Flaps When Cruise Speed is Attained

Cruise

After Reaching Cruise Altitude Mixture May Be Leaned
Monitor Cylinder Head Temperature

Before Landing

- Fuel Selector to Tank with Most Fuel
- Turn ON Auxiliary Fuel Pump
- Mixture Rich
- Carb. Heat ON (When Needed)
- Reduce Speed to 120 MPH
- Gear DOWN and LOCKED
- Governor Control Full Forward
- Apply Flaps at 100 MPH
- Trim As Necessary

After Landing

- Open Cowl Flaps
- Retract Flaps After Clearing Runway

Stopping

- Reduce RPM to 1000
- Mixture Full Lean (Idle Cut-off)
- Magneto Switches OFF (After Engine Stops)
- Master Switch OFF

Manually Starting the Engine

In the event it becomes necessary to prop start the engine due to low battery, the following procedure is to be followed.

- (1) Turn off the "starter disconnect switch". This switch is located behind the instrument panel on the upper center part of the firewall. It disconnects the starter so that when the magneto switch is turned to the start position, only the starter vibrator operates.
- (2) As the engine is "propped", hold the magneto switch in the "start" position. This operates the starter vibrator and furnishes retarded spark to the engine.
- (3) When the engine starts, release the switch to the "both" position and place the "starter disconnect switch" to the "on" position.

C.G. Forward of Main Fuel: $\frac{493 \times 67.0}{1538} = 21.6$

C.G. of Main Fuel: $\frac{21.6 \times 1538}{1538} = 21.6$

C.G. of Fuel: $\frac{21.6 \times 1538}{1538} = 21.6$

The Empty Weight C.G. location is with the landing gear extended and with both front seats in the forward position. (40.0"). Each seat weighs 17.5 pounds. Maximum seat weight is 2.3" in 2 equal increments. Maximum change per seat in aft position, (47.5") is 7.5 lbs.

Mooney Aircraft, Inc.

Kerrville, Texas

MOONEY MODEL TWENTY C
ACTUAL WEIGHT & BALANCE DATA

F.A.A. Identification No. N6667U
Serial No. 2394

Date 2-27-63

1. WEIGHT LIMITS:

Maximum weight is 2575 pounds.
It is the responsibility of the airplane owner and of the pilot to insure that the airplane is properly loaded. The empty weight, empty weight C.G., and useful load are noted below for this airplane as delivered from the factory. If the airplane or equipment have been altered, refer to the latest Approved Repair & Alteration Form (ACA-337) for this information.

2. C. G. LIMITS:

C.G. Envelope: 2100 lbs. at 42" (15.0% MAC) to 2575 lbs. at 46.5" (22.6% MAC) to 2575 lbs. at 49.0" (26.8% MAC). Straight line variation between respective limits. All with landing gear extended.

3. EMPTY WEIGHT & WEIGHT C.G. LOCATION:

Actual weight empty, as weighed. (Includes residual oil and unusable fuel):
3.38 lbs. at 48.4" Main).

Item	Weight	
Right Main Wheel	521	
Left Main Wheel	522	
Nose Wheel	495	
Weight Empty as Weighed	1538	

Horizontal Datum is Centerline of Nose Gear Support Bolts (Sta. 0) and is 33.0" forward of Wing L.E. at Wing Sta. 59.25 (Inboard edge of stall strip). MAC is 59.2". L.E. of MAC is 33.1" aft Datum. Leveling means: Door sill (parallel to thrust line). Spirit level is used to level.

Computations:

C.G. Forward of Main Wheels = $\frac{495 \times 67.0}{1538} = 21.6$ "

C.G. aft Datum = $66.0 - 21.6 = 44.4$ "

C.G. % MAC = $(\frac{44.4 - 33.1}{59.2}) \times 100 = 19.1$ %MAC

The Empty Weight C.G. location is with the landing gear extended and with both front seats in the forward location. (40.0"). Each seat weighs 17.0 pounds. Maximum seat travel is 7.5" in 6 equal adjustments. Moment change per seat in aft position, (47.5") is 128 in.lbs.

MOONEY AIRCRAFT, INC.

Kerrville, Texas

MOONEY M20C & M20D
ACTUAL WEIGHT & BALANCE DATA

Date 2-27-63

F.A.A. Identification No. N6667U

Date 2-27-63

4. EQUIPMENT LIST:

The following equipment was installed in this airplane as delivered from the factory and is included in the Empty Weight:

Check Items Installed

No.		Wt.	Arm
4.	Hartzell Constant Speed Propeller		
(X)	(a) Hartzell HC-C2YK Hub with 1/7666-2 Blades	53.75	(-30.16)
(X)	(b) Hartzell Spinner Assembly 835-20	3.25	(-29.18)
(X)	(c) Hartzell Governor D-1-4 D-1-6	4.5	(+3.6)
{ }	5. McCauley Constant Speed Propeller		
{ }	(a) McCauley 2D34C53-A Hub W/74E-0 Blade	49.25	(-30.31)
{ }	(b) McCauley D-2808 Dome, D-3148 Bulkhead & Fillet Assembly	3.25	(-29.18)
{ }	(c) Woodward 210345 Propeller Governor	3.0	(+4.0)
{ }	101. Fuel Pumps		
(x)	(a) One Engine-Driven Pump, AC Type AH	1.5	(+1.2)
(x)	(b) One Electric Pump, Bendix 476087	1.8	(+19.0)
(x)	102. Oil Radiator		
(x)	(b) Harrison 8526250	2.0	(-18.0)
(x)	103. Carburetor Air Filter, Air-Maze 13219	1.0	(-17.0)
(x)	104. Starter		
(x)	(c) Delco-Remy 1109689	17.8	(-18.0)
(x)	201. Two Main Wheel-Brake Assemblies, 6.00-6		
	(c) Cleveland Model DH3-3	19.1	(64.5)
	Wheel Assembly No. 40-24		
	Brake Assembly No. 35-5		
(x)	202.(a) Two Main Wheel 6-Ply Rating Tires, 6.00-6	17.0	(+64.5)
	Type III, with Regular Tubes		
(x)	205. One Nose Wheel, 5.00-5, Type III		
	(b) Cleveland Model 40-33	4	(-2.0)
(x)	206.(a) One Nose Wheel 4-Ply Rating Tire, 5.00-5	7	(-2.0)
	Type III, with Regular Tube		
(x)	301. Electric Generator		
	(c) 50 AMP, Delco-Remy 1101915	16.6	(-19.5)
(x)	302.(c) Auto-Lite Battery R-35	28.0	(+2.5)
(x)	303. Voltage Regulator		
	(c) 50 AMP, Delco-Remy 1119224	2.0	(+7.0)
(x)	401. FAA Approved Airplane Flight Manual dated		
	10-20-61 for M20C or 10-15-62 for M20D		
(x)	601. Stall Warning Indicator, Safe-Flight Model 164R	1.0	(+28.0)
	602. Vacuum System		
(X)	(a) In Accordance With Mooney Dwg. 610012 (8614)	6.0	(+2.0)
(X)	603. Instruments		
(X)	(a) Horizon Gyro	4.5	(+19.0)
(X)	(b) Directional Gyro	4.0	(+20.0)
(X)	(c) Clock	.4	(+23.8)
(X)	(d) Outside Air Temperature Gauge	.2	(+33.0)
(X)	(e) Rate of Climb Indicator	1.5	(+22.3)

MOONEY AIRCRAFT, INC.

Kerrville, Texas

MOONEY M20C & M20D
ACTUAL WEIGHT & BALANCE DATA

Date 2-27-63

F.A.A. Identification No. N6667U

4. EQUIPMENT LIST (Cont'd.)

No.		Wt.	Arm
(X)	(f) Electric Turn & Tank Indicator	1.9	(+21.4)
(X)	604. Cigarette Lighter	.2	(+21.0)
*(X)	605. Rotating Beacon, Grimes, in accordance with Mooney Dwg. 950018 (8234)	2.0	(+163.0)
(X)	606. Dual Controls	3.5	(+14.0)
*(X)	607. King KX-120 & KI-200 I/A/W dwg. 950001-509	13.2	+49.0
	608.		
	609.		
	610.		
	611.		
	612.		
	613.		

5. EMPTY WEIGHT AFTER INSTALLATION OF OPTIONAL EQUIPMENT:

Item	Weight	Arm	Moment
Weight Empty as Weighed	1538	44.4	68287
605.	2.0	163.0	326
607.	13.2	49.0	647
Navco Escort 110 Nav/com added 3-30-71 up	5.0	17.0	85
King KX-160	6.0	17.0	102.00
KI-505	5.0	123.0	615.00
KI-201	3.0	18.0	54.00
HT-7P	2.0	17.0	51.00

Computed Empty Weight & C.G. ← up added, see weight report 3-31-63 up
 *Added after Production Weight & Balance 1553 44.6 69260
 **Rebuilt Instruments _____
 ***Removed after Production Weight & Balance _____

1-20-76 1577.80 44.87 70809.0
 Page 3 *up added* 997.20

Mooney Aircraft, Inc.

Kerrville, Texas

MOONEY MODEL TWENTY C
ACTUAL WEIGHT & BALANCE DATA

F.A.A. Identification No. N6667U

Date 2-27-63

6. WEIGHT & BALANCE LOADING COMPUTATIONS:

A. Most Forward at any Weight

Item	Weight	Arm	Moment
Weight Empty	1553	44.6	69260
Oil (2 Gals.)	15	7.4	-111
Front Seats moved aft <u>0</u> " each	-	-	0
Pilot (<u>1st</u> Position of Seat)	170	36.5	6205
Pilot or Passenger (<u>1st</u> Position of Seat)	170	36.5	6205
Fuel (15.0 Gals. Minimum in Tanks)	90	48.4	4356
Weight & C.G.	1998	43.0	85915
Maximum Allowable Weight at <u>43.0</u> " = 2100 + 106 (<u>43.0</u> - 42.0) = <u>2206</u> lbs.			

B. Most Forward Loading with Full Tank

Item	Weight	Arm	Moment
Weight Empty	1553	44.6	69260
Oil (2 Gals.)	15	7.4	-111
Front Seats moved aft <u>0</u> " each	-	-	0
Pilot (<u>1st</u> Position of Seat)	170	36.5	6205
Pilot or Passenger (<u>1st</u> Position of Seat)	170	36.5	6205
Fuel (48.0 Gals. Maximum in Tanks)	288	48.4	13,939
Weight & C.G.	2196	43.5	95498
Maximum Allowable Weight at <u>43.5</u> " = 2100 + 106 (<u>43.5</u> - 42.0) = <u>2259</u> lbs.			

C. Most Forward Loading at Gross Weight

Item	Weight	Arm	Moment
Weight Empty	1553	44.6	69260
Oil (2 Gals.)	15	7.4	-111
Front Seats moved aft <u>0</u> " each	-	-	0
Pilot (<u>1st</u> Position of Seat)	170	36.5	6205
Pilot or Passenger (<u>1st</u> Position of Seat)	170	36.5	6205
Fuel (<u>48.0</u> Maximum)	288	48.4	13939
Rear Passengers (2)	340	70.7	24,038
Baggage	39	93.0	3627
Weight & C.G.	2575	47.8	123163
Allowable Weight & C.G. 2575 lbs. at 46.5			

D. Most Rearward Loading at Gross or any Weight

Item	Weight	Arm	Moment
Weight Empty	1553	44.6	69260
Oil (2 Gals.)	15	7.4	-111
Front Seats moved aft <u>1.3</u> " each	-	-	44
Pilot (<u>2nd</u> Position of Seat)	170	37.8	6426
Pilot or Passenger (<u>2nd</u> Position of Seat)	170	37.8	6426
Fuel (<u>38.7</u> Gals.)	232	48.4	11229
Rear Passengers (2)	340	70.7	24,038
Baggage (Maximum)	95	93.0	8835
Weight & C.G.	2575	49.0	126147
Allowable Weight & C.G. 2575 lbs. at 49.0"			

NOTE: These computations cover the various combinations of allowable loading in the Loading Schedule on Page 5.

F.A.A. Identification No. N6667U

Date 2-27-63

7. USEFUL LOAD:

Maximum Useful Load is 2575 - 1553 = 1022 lbs.

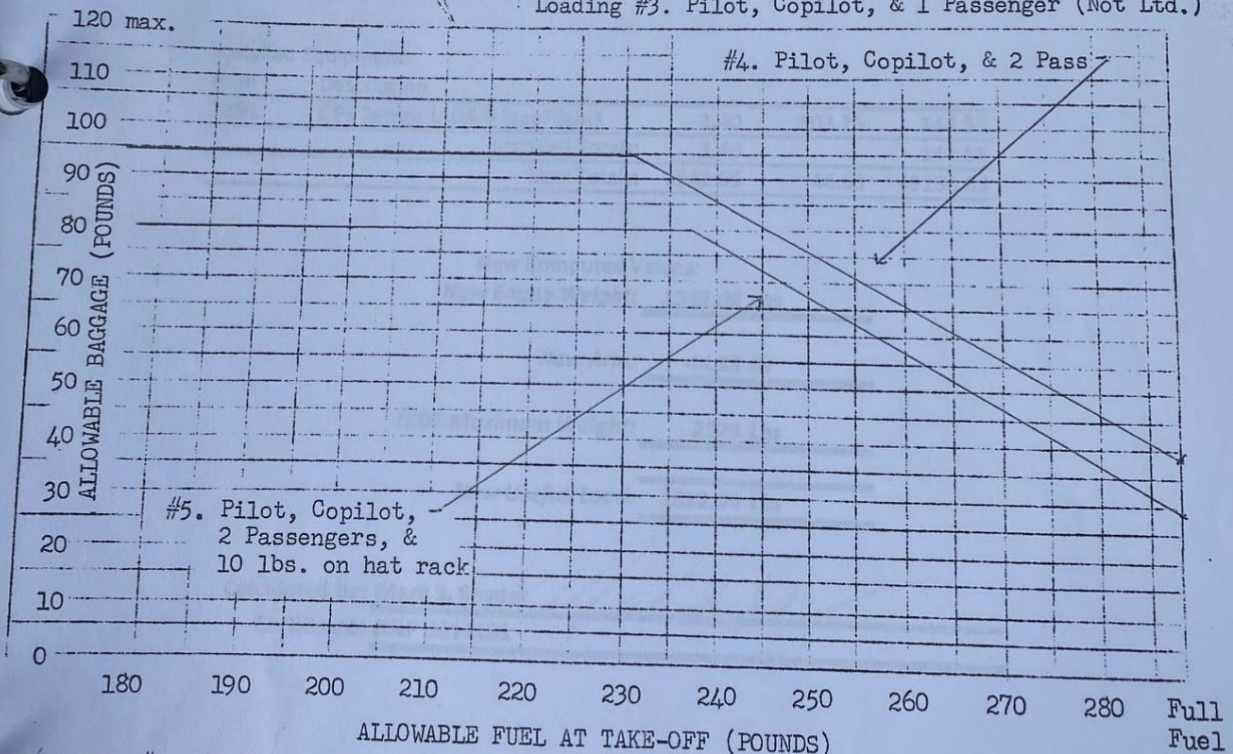
Useful Load Items are:

Item	Weight	Arm
Oil, 2 Gallons	15	-7.4
Pilots, (2) each	170	36.5 to 44.0
Fuel, 48 Gallons Maximum	288	48.4
Rear Passengers, (2) each	170	70.7
Baggage Maximum	120	93.0
Hat Rack Maximum	10	114

8. LOADING SCHEDULES:

The following loading schedules are based on the computations from Page 4 and are furnished to enable the pilot to insure that the airplane is properly loaded before flight. All loading combinations shown are within the Approved Loading Envelope. See Section 6D, Weight and Balance Loading Computations, for most aft front seat positions with loadings #4 and #5 at maximum baggage. No other loadings are permissible unless substantiated by additional computations. A ten pound hat rack load may be included with Loading #1, #2, or #3.

- Loading #1. Pilot Alone (Not Limited)
- Loading #2. Pilot & Copilot (Not Limited)
- Loading #3. Pilot, Copilot, & 1 Passenger (Not Ltd.)



Loading #4: take-off fuel with 95 # baggage = 1880 - 95 - empty wt. = 232 lbs. (max)
 baggage with full fuel = 1592 - empty wt. = 39 lbs. (max)

Loading #5: take-off fuel with 80 # baggage* = 1870 - 80 - empty wt. = 237 lbs. (max)
 baggage with full fuel = 1582 - empty wt. = 29 lbs.

*Note: Max. baggage for Loading #5 is 15 lbs. less than max. baggage for Loading #4.

Weight and Balance, Equipment List Update

N6667U

Weight & Balance, Equipment List Update Date: December 23, 2013

Aircraft Registration Number: N6667U

Make: Mooney Serial Number: 2394
Model: M20C

TCDS: 2A3 Rev: 53 Date: November 25, 2013
Max Aircraft Weight: 2575

	Weight (lbs)	Arm (in)	Moment (in lbs)
Previous Weight and Balance (June 6, 2012):	<u>1542.16</u>	<u>44.84</u>	<u>69146.95</u>

Removed Equipment:

Item	Description	Weight (lbs)	Arm (in)	Moment (in lbs)
21000	GPS (ADS-B NexNav)	-1.50	103.25	-154.88
Removed Totals:		<u>-1.50</u>		<u>-154.88</u>

Installed Equipment:

Item	Description	Weight (lbs)	Arm (in)	Moment (in lbs)
1201	GPS Sensor (ADS-B FreeFlight)	1.40	103.25	144.55
Installed Totals:		<u>1.40</u>		<u>144.55</u>
New Totals:		<u>1542.06</u>	<u>44.83</u>	<u>69136.63</u>

New Computed Values:

New Empty Weight: 1542.06 Lbs

New Arm: 44.83 IN

TCDS Maximum Weight: 2575 Lbs

New Usefull Load: 1032.94 Lbs

Calculated By: Mark S. Snyder

Certificate: A&P 3014101

Peregrine
13000 E Control Tower Rd
Suite 202 Box K-4
Englewood, CO 80112
E-TA-11-0009 Rev B

Trig TT31 Mode S Transponder
ADS-B Out System

**FAA Approved
Airplane Flight Manual Supplement
to the
Mooney Aircraft
Models M20B, C, D, E, F, G, J, and K
Airplane Flight Manual**

ADS-B Transmitter: Trig TT31 Transponder

Position Source: Freeflight 1201 GPS or
Accord Technologies NexNav Mini 21000 GPS

Serial No. 2394 Registration No. N6667U

This supplement must be attached to the FAA Approved Airplane Flight Manual when the aircraft is modified for ADS-B Out by the installation of the Trig TT31 Mode S Transponder using an ADS-B Out GPS Position Source when it has been installed in accordance with Supplemental Type Certificate #SA00744DE.

The information contained herein supplements or supersedes the basic manual only in those areas listed herein. For limitations, procedures, and performance information not contained in this supplement, consult the basic Airplane Flight Manual.

FAA Approved 
Manager, Flight Test Branch, ANM-160L
Federal Aviation Administration
Los Angeles Aircraft Certification Office
Transport Airplane Directorate

DATE: NOVEMBER 8, 2012
Original Date: April 2, 1012