



1965 MOONEY M20E

“SUPER 21”

N5632Q

SN 672

GENERAL INFORMATION

PRE-FLIGHT

TIME SENSITIVE

EMERGENCY

MOONEY M20E

CHECKLIST

[FLIGHT PLAN DESIGNATION IS “M20P”]

INFO:

Engine.....Lycoming IO-360-A1A

Rated HP200 BHP @ 2700 RPM

Propeller.....Hartzell 2-Blade, Constant-Speed, Aluminum

Electrical 12 Volt, 50 Amp Generator

Oil Type.....Phillips X/C (20w-50 or 100w)

Oil Capacity.....8 qts.

Fuel.....100LL or 100/130

....Dual Tanks

....26 Gal per side

....52 Gal total

....1 Gal unusable each wing

AIRCRAFT V SPEEDS & LIMITATIONS

	MPH	KIAS
V _R	65-75.....	
V _X	80.....	
V _Y	105.....	
V _{NE}	189.....	
V _{NO}	150.....	
V _A	132.....	
V _{FE}	100.....	
V _{LE}	120.....	
V _{S1}	70.....	
V _{S0}	63.....	
V _G	100-105.....	
Max demonstrated cross wind	15 Kts.	
Gross Weight.....	2575 lbs.	
Max ceiling (gross)	14,300'	
Take-off run (@SL gross).....	760'	
Landing run (@SL gross)	595'	
Take-off run 50ft (@SL gross)	1,300'	
Landing run 50ft (@SL gross).....	1,550'	

PREFLIGHT INSPECTION

Preparation: Remove gust locks,
Tie Down Ropes, Pitot Tube Cover,
Other Plane Protection Items/
Covers.

CABIN

- ⊗ Tach - Check and Record
- ⊗ Documents - AROW
- ⊗ Ignition & Master - Off
- ⊗ All Electrical - Off
- ⊗ Trim - Takeoff Position
- ⊗ Avionics - Off
- ⊗ Master (Clear Area) - On
- ⊗ Fuel Gauges - Check Quantities
- ⊗ Flaps - Full Down
- ⊗ Lights - Check
- ⊗ Master - Off
- ⊗ Fuel Select Control - On Fuller Tank
- ⊗ Engine Fuel Sump - Drain & Check

WARNING

For Flight Safety, Pilot Should
Verify Actual Fuel Quantity
Visually in Tanks Before Takeoff.

EXTERIOR CHECK

- ⊗ Right Flap - Hinges, Connections
- ⊗ Right Aileron - Movement, Hinges
- ⊗ Right Wing - No Damage
- ⊗ R. Wing Nav Lt - Check
- ⊗ Leading Edge - Check
- ⊗ Right Wing Tie-down - Remove
- ⊗ Right Fuel Vent - Check Clear
- ⊗ Right Fuel Tank - Visually Check
- ⊗ Right Fuel Sump - Check Quality
- ⊗ Right Tire, Brake - Inflation, Wear
- ⊗ Engine Oil Level - Check (6-8 qts)
- ⊗ Engine Mounts - Check
- ⊗ Fuel/Oil Leaks - Check

EXTERIOR CHECK CONT.

- ⊗ Cowl & Prop - Nicks & Security
- ⊗ Generator Belt - Wear, Tightness
- ⊗ Air Intake & Filter - Obstructions
- ⊗ Landing Light - Check
- ⊗ Nose Gear - Check Tire & Strut
- ⊗ Oil Cooler - Check Condition
- ⊗ Left Fuel Sump - Drain & Check
- ⊗ Left Fuel Tank - Visually Check
- ⊗ Left Tire, Brake - Inflation, Wear
- ⊗ Left Fuel Vent - Check Clear
- ⊗ Left Wing Tie-down - Remove
- ⊗ Stall Warning - Clear
- ⊗ Pitot-Static System - Check
- ⊗ Left Wing - No Damage
- ⊗ Leading Edge - Check
- ⊗ L. Wing Nav Light - Check
- ⊗ Left Aileron - Movement, Hinges
- ⊗ Left Flap - Hinges, Connections
- ⊗ Left Fuselage - Check for Damage
- ⊗ Vertical Stabilizer - Check
- ⊗ Strobe Lt - Check
- ⊗ Elevator - Movement
- ⊗ Rudder - Check
- ⊗ Tail Tie Down - Remove
- ⊗ Right Fuselage - Check
- ⊗ Antennas - Check
- ⊗ Windshield - Check Clean
- ⊗ **BAGGAGE DOOR** - closed and locked

ENGINE START

- ⊗ Tow-Bar - Removed/VERIFY
- ⊗ All Seats, Belts, Door - Set & Secure
- ⊗ Passenger Briefing
 - ⊗ Door Operation
 - ⊗ Seat Belt Usage
 - ⊗ Emergency Equipment
 - ⊗ PIC for Flight
 - ⊗ 3 Step Control Process
 - ⊗ Purpose of Flight
 - ⊗ Taxi/Flight Brief
- ⊗ Fuel Selector - Check on Fuller Tank
- ⊗ Flaps - Take Off (Visually Check)
- ⊗ Trim - Take Off Setting
- ⊗ All Electrical Switches - Off
- ⊗ Master Switch - On
- ⊗ Strobe - On
- ⊗ Mixture Control - Rich
- ⊗ Throttle - Full Power
- ⊗ Fuel Pump - On (5 seconds) Off
- ⊗ Mixture - Idle Cutoff
- ⊗ Throttle - Cracked 1/4"
- ⊗ Prop - Call "CLEAR" & Visually Check
- ⊗ Ignition Switch - Start
- ⊗ Mixture - Full rich on engine "starting/coughing"
- ⊗ Throttle - Adjust 800-1000RPM
- ⊗ Oil Pressure - Needle In Green
- ⊗ Mixture - Lean ~1"
- ⊗ Nav Lights - On
- ⊗ Avionics & Radios - On
- ⊗ Transponder - STBY
- ⊗ Taxi Lights - On (Night)
- ⊗ Brake Check - Before Taxiing
- ⊗ Get ATIS & Clearance - If Applicable

ENGINE RUNUP

- ⊗ Nose Gear - Straight
- ⊗ Throttle - 800 RPM
- ⊗ Cabin Door - Closed & Latched (Do Not Slam!)
- ⊗ Seat Belts - Check Self & Pax
- ⊗ Flight Controls - Check Movement
- ⊗ Trim Tab - Set for Takeoff
- ⊗ Fuel Selector - Check ON Fuller Tank
- ⊗ Flight Instruments - Check & Set
- ⊗ Radios - Set for Frequencies
- ⊗ Mixture - Rich
- ⊗ Fuel Pump On, Check Press, Then Off
 - ⊗ Check R&L Tanks Separately
- ⊗ Throttle - 2000 RPM
- ⊗ R-L Magnetos
 - ⊗ Max 150 Drop
 - ⊗ 50RPM Differential
- ⊗ Exercise Propeller
 - ⊗ Check for oil pressure drop
- ⊗ Ammeter - Check Charging
- ⊗ Suction Gauge - 5" HG (+/- .1)
- ⊗ Engine Instruments - Check
- ⊗ Throttle - 800 RPM

ENGINE FAILURE BREIF

Engine Failure During Takeoff Roll

- ⊗ Throttle - Idle
- ⊗ Brakes - Full Stop

Engine Failure After Rotation With Available Runway

- ⊗ Throttle - Idle
- ⊗ Land On Remaining Runway
- ⊗ Brakes - Full Stop

Engine Failure After Rotation with No Remaining Runway

- ⊗ Throttle - Idle
- ⊗ Pitch for Best Glide
- ⊗ Landing Site Select, no more than 30 Degrees either way
- ⊗ Prepare for Forced Landing

BEFORE TAKEOFF

- ⊗ Mixture - Full Rich
- ⊗ Transponder - Switch to Altitude
- ⊗ Throttle Friction Lock - As Needed
- ⊗ Propeller - Max RPM
- ⊗ Flaps - set to take off
- ⊗ Cowl Flaps - Open
- ⊗ Landing & Strobes - On
- ⊗ Directional Gyro - Set by Compass
- ⊗ Tower Clearance - If Applicable

TAKEOFF

- ⊗ Throttle Full
- ⊗ Rotate - 65-75 MPH
- ⊗ Gear - retract no runway remaining
- ⊗ Elec. Fuel Pump - Off at 1000AGL
- ⊗ Flaps - Up
- ⊗ Engine Instruments - In Green
- ⊗ T.O. Time - Noted
- ⊗ Climb Out - 105 MPH

CRUISE

- ⊗ Throttle - 21" - 25"
- ⊗ RPM - 2350-2500
- ⊗ Mixture - Lean Above 3000 Ft.
- ⊗ Lights - NAV lights must remain on

CAUTION

Check Fuel Gauges Frequently
To Prevent Fuel Starvation.

Others as needed

- ⊗ Fuel Select - Alternate Tanks
30mins—1 hour

BEFORE LANDING

- ⊗ Tune & Get ATIS Info
- ⊗ Advise Tower of Distance and Direction From Airport if Applicable
- ⊗ Check Seat Belts - Self & Pax
- ⊗ Fuel Selector - On Fuller Tank
- ⊗ Fuel Mixture - Rich
- ⊗ Electric Fuel Pump - On
- ⊗ Landing Light - On
- ⊗ Gear extended - Below 120mph
- ⊗ Propeller - Max RPM

LANDING

- ⊗ Verify Gear Down! GUMPS
- ⊗ Electrical Fuel Pump - Verify On
- ⊗ Throttle - Establish 105 MPH
- ⊗ Flaps - 1st Notch (10°) under 100
- ⊗ Base Leg Flaps - 2nd Notch (20°)
- ⊗ Final Leg Flaps - 3rd Notch (35°)
- ⊗ Landing Spd Short Final - 75 MPH
- ⊗ VERIFY GEAR DOWN!

AFTER LANDING

- ⊗ Clear Active Runway - Radio Call
- ⊗ Flaps - Retracted
- ⊗ Elec. Fuel Pump - Off
- ⊗ Elevator Trim - Set to Neutral
- ⊗ Transponder - Set to Standby
- ⊗ Contact Gnd. Con. For Clearance if Applicable

SECURING AIRCRAFT

- ⊗ Avionics & Radios - Off
- ⊗ Electrical Switches - Off
- ⊗ Mixture - Idle Cut-Off
- ⊗ Ignition - Off
- ⊗ Master Switch - Off
- ⊗ Beacon - Off
- ⊗ Control Lock - In Place
- ⊗ Tach - Record
- ⊗ Tie-Downs / Covers - Secure

LANDING WITH A FLAT NOSE TIRE

- ⊗ Pre-landing checklist..... COMPLETE
- ⊗ Approach NORMAL
- ⊗ Flaps..... AS REQUIRED
 - ⊗ 85 MPH..... Flaps UP-10
- ⊗ Land and maintain aircraft NOSE HIGH attitude as long as possible

LANDING WITH A FLAT MAIN TIRE

- ⊗ Pre-landing checklist..... COMPLETE
- ⊗ Approach NORMAL
- ⊗ Flaps..... FULL
- ⊗ Directional Control MAINTAIN
- ⊗ Land the airplane on the opposite side of runway to the side with the defective tire to compensate for change in direction, which is to be expected during final rolling.
- ⊗ Touchdown with the GOOD TIRE FIRST and hold flat tire off the ground as long as possible.

DOOR OPEN IN FLIGHT

- ⊗ Airspeed 100 MPH Or Less
- ⊗ Cabin Vents..... Closed
- ⊗ Push Door Further Open Then Shut, Locking Top Latch

A Slip In The Direction Of The Open Door Will Assist In Latching Procedure

ALTERNATOR FAILURE

If A Zero Reading Is Being Indicated By The Ammeter, First Activate An Electrical Device To Ensure The Ammeter Isn't Just Showing Low. If No Increase Is Seen, Alternator Failure Can Be Assumed.

- ⊗ Electrical Load Reduce
- ⊗ Alternator Breaker..... Check
- ⊗ Alt Switch..... Off For 1 Second, Then On

If Ammeter Continues To Show No Output, Or Alternator Will Not Stay Reset, Turn Off ALT Switch, Maintain Minimum Electrical Load and Land As Soon As Practical.

EMERGENCY PROCEDURES

Emergency procedures shown in bold faced type are immediate action items which should be committed to memory.

ENGINE FAILURE DURING TAKEOFF ROLL

- ⊗ Throttle - IDLE
- ⊗ Brakes - **APPLY AS NEEDED**
- ⊗ Wing Flaps - RETRACT
- ⊗ Mixture - IDLE CUTOFF
- ⊗ Magnetos - OFF
- ⊗ Master Switch - OFF

ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF

NOSE DOWN!

- ⊗ Airspeed - 80 MPH
- Suitable Landing Site off Nose, No more than 45° either way**
- ⊗ Flaps - **AS REQUIRED**
- ⊗ Mixture - IDLE CUTOFF
- ⊗ Magnetos - OFF
- ⊗ Master switch - OFF
- ⊗ Door Latch - OPEN (Just Prior to Touchdown)

ENGINE FIRE DURING START

- ⊗ IF STARTED
 - ⊗ **RUN ENGINE TO 1800 RPM For 2 Minutes**
 - ⊗ **ENGINE - Shutdown And Inspect**
- ⊗ IF NOT STARTED
 - ⊗ Throttle - Full Open
 - ⊗ Mixture - Idle Cut-Off
 - ⊗ **CONTINUE CRANKING TO EXTINGUISH FLAMES**

ENGINE ROUGHNESS OR RPM LOSS

- ⊗ Carb Heat - ON
- ⊗ Throttle - Full
- ⊗ Magnetos - Check Both
- ⊗ Mixture - Lean (as required)

ENGINE FAILURE DURING FLIGHT

- ⊗ Establish Glide - 80 MPH
 - ⊗ Select Emergency Landing Site
 - ⊗ Fuel Selector - Switch To Another Tank With Fuel
 - ⊗ Electric Fuel Pump - ON
 - ⊗ Mixture - FULL RICH
 - ⊗ Carb Heat - ON
 - ⊗ Primer - Check In & Locked
 - ⊗ Throttle - Open
 - ⊗ Engine Gauges - Look for Problem
 - ⊗ Master Switch - Check On
 - ⊗ Magnetos - Check on Both
 - ⊗ Ignition to Start if Propeller Stopped
- IF ALTITUDE PERMITS, TRY RESTART CONTINUOUSLY**

SECURING FOR FORCED LANDING

- ⊗ Fuel Selector - OFF
- ⊗ Mixture - Idle Cut-Off
- ⊗ Throttle - Closed
- ⊗ Flaps - As Required
- ⊗ Ignition Switch - Off
- ⊗ Transponder - Set 7700
- ⊗ Radio - Set to 121.5, Declare
 - ⊗ "Mayday, Mayday, Mayday, N95315, Location"
- ⊗ Seats and Belts - SECURE
- ⊗ Door - Ajar Just Before Landing
- ⊗ Master Switch - Off When Field Made

LOW OIL PRESSURE

- ⊗ Oil Temp - CHECK
 - Above Green or Rising; **LAND** as soon as possible and be alert for impending engine failure
 - ⊗ Throttle - REDUCE IMMEDIATELY
 - If stable within the green arc; **LAND** as soon as practical
 - ⊗ Oil Temp/PSI - Monitor
- If Roughness Continues Land As Soon As Practical**

ENGINE FIRE IN-FLIGHT

- ⊗ Mixture - IDLE CUTOFF
 - ⊗ Fuel Selector - OFF
 - ⊗ Ignition Switch - OFF
 - ⊗ Master Switch - OFF
 - ⊗ Cabin Heat/Air - CLOSED
 - ⊗ Air Speed - INCREASE TO BLOW OUT FIRE
 - ⊗ DO NOT EXCEED V_{NE} 171 MPH
- DO NOT Attempt an In-Flight Restart**
- ⊗ Procedure For a Forced Landing

ELECTRIC FIRE IN CABIN IN FLIGHT

- ⊗ Master Switch - OFF
 - ⊗ Air Vents - OPEN
 - ⊗ Cabin Heat - OFF
 - ⊗ Fire Extinguisher - ACTIVATE,
 - ⊗ Ventilate Cabin After Discharge
 - ⊗ Avionics - OFF
 - ⊗ ALL Other Switches - OFF (Except Magnetos)
- IF FIRE HAS NOT BEEN EXTINGUISHED**
- ⊗ Master Switch - ON
 - ⊗ Rapid Descent - Execute
 - ⊗ DO NOT EXCEED V_{ne}
 - ⊗ Avionics - ON
 - ⊗ Radio - Alert ATC or 121.5 MAYDAY
 - ⊗ Forced Landing - Execute

IF FIRE HAS BEEN EXTINGUISHED AND ELECTRICAL POWER IS NECESSARY

- ⊗ Cabin Vents - Open
- ⊗ Circuit Breakers - Check for Open, DO NOT RESET
- ⊗ Master Switch - ON
- ⊗ Avionics - ON
- ⊗ Precautionary Landing - Execute

WING FIRE

- ⊗ NAV Light - OFF
- ⊗ Sideslip to Keep Flames Away from the Fuel Tank and Cabin
- ⊗ Land as Soon as Possible

PRECAUTIONARY LANDING WITH ENGINE POWER

- ⊗ Seatbelts - SECURE
- ⊗ Airspeed - 85 MPH
- ⊗ Wing Flaps - As Needed
- ⊗ Radio - ALERT ATC/ MADAY 121.5
- ⊗ Transponder - SQUAWK 7700
- ⊗ Selected Field - FLY OVER
 - ⊗ (noting terrain & obstacles)
- ⊗ Airspeed - 80 MPH
- ⊗ Mater Switch - OFF (ALT&BAT)
 - ⊗ (when landing is assured)
- ⊗ ELT - ACTIVATE
- ⊗ Door Latch - OPEN
 - ⊗ (just prior to touchdown)
- ⊗ Touchdown - SLIGHTLY TAIL LOW
- ⊗ Mixture - IDLE CUTOFF
- ⊗ Magnetos - OFF
- ⊗ Brakes - APPLY HEAVILY

N5632Q Weight & Balance

	Weight (lbs)	Arm	Moment
Aircraft Weight	1614	46.66	75317.2
Pilot & Front Pax		36.5—44	
Rear Pax		70.7	
Fuel total (max 52gals)		48.4	
Baggage (max 120lbs)		93	
Hat Rack (max 10lbs)		114	
Totals			
		C.G.	
	1614 lbs	2100 lbs	2575 lbs
CG range:	42" - 49"	42" - 49"	46.5" - 49"
Useful Load:	961 lbs		
Max Weight:	2575 lbs		

Takeoff & Climb			
TOR	TOD	Climb KTAS	Climb FPM

Cruise			
KTAS	GPH	Endurance	Range

Landing	
LR	LD