



MOONEY AIRPLANE COMPANY, INC.

100 Hour-Annual Inspection Guide

Date _____
 Owner's Name _____ Address _____
 Reg. No. _____ A/C Serial No. _____ A/C Tach Time _____
 Engine Model No. _____ Serial No. _____
 Propeller Model No. _____ Serial No. _____
 Engine Time _____ Hours _____ Brand of Oil/Weight Used _____

1. Is Approved Flight or Owners manual in aircraft? Yes No Current & in proper condition Yes No
2. Are current log books in aircraft? Yes No Current & in proper condition Yes No
3. Is Registration Certificate in aircraft? Yes No Current & in proper condition Yes No
4. Is Airworthiness Certificate in aircraft? Yes No Current & in proper condition Yes No
5. Is Weight & Balance Record in aircraft? Yes No Current & in proper condition Yes No
6. Is all applicable factory service information complied with? Yes No
7. Are all applicable FAA Airworthiness Directives complied with? Yes No

NOTE:

This sheet is a guide only - refer to the specific model's Service & Maintenance Manual for airframe, engine and propeller inspections.

Mechanic Signature _____ Inspector Signature _____

ENGINE SECTION: (Refer to engine manufacturers manual & Mooney Service & Maintenance Manual for appropriate model)	MECH	INSP
1. Remove and clean engine cowling and baffling; inspect for cracks, wash engine.		
2. Perform a HOT engine differential compression check. Cylinder Readings: 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____		
LUBRICATING SYSTEM:		
1. Drain sump and change oil filter (if installed).		
2. Remove pressure and suction screens; check for metal particles.		
3. Clean and inspect screens. Reinstall and safety wire screens.		
4. Inspect condition of oil cooler.		
5. Service engine with recommended lubricating oil, (Refer to Textron Lycoming Specification 301E & Service Instruction 1014 or TCM Service Manual).		
6. Check engine for oil leaks (note & correct).		
IGNITION SYSTEM:		
1. Inspect spark plugs; replace or clean & re-gap.		
2. Inspect ignition harness for general condition, free from fraying or chafing.		
3. Inspect magnetos & points; check magneto timing; check distributor block for erosion or cracks. Overhaul Bendix magnetos each 500 hours/4 years per TCM SB 643B.		
ELECTRICAL SYSTEM:		
1. Inspect battery(ies) for security, battery box (or area) for corrosion & vent for obstruction.		
2. Inspect generator/alternator(s) and accessories.		
3. Inspect electrical components & wiring.		
4. Inspect starter & starter drive; lubricate starter drive.		
5. For Garmin G1000 equipped A/C, refer to G1000 documentation for continued airworthiness instructions.		
INDUCTION SYSTEM: (Challenger Aviation Filter Equipped Aircraft)		
1. Recharge filter every 100 hours. Inspect filter housing for debris and component condition (hoses, clamps, etc.). Check opening pressure/operation of ALT air door.		
FUEL SYSTEM - M20B, C, D, G:		
1. Inspect & drain carburetor, clean screens and check fuel flow.		
2. Inspect carburetor heat system for leaks & proper operation.		
3. Remove, clean, inspect and re-oil air filter.		
4. Inspect carburetor airbox & induction system for condition.		
5. Inspect fuel selector valve for operation & proper pointer indication. Verify positive valve selection while rotating fuel selector valve through selection range. Tighten/Loctite set-screw if required.		
6. Operate boost pump, check pressure and all lines for leaks.		
7. Clean electric fuel pump screen (1963 & previous models).		
8. Drain fuel sumps and fuel selector valve (Right & Left tanks).		

FUEL SYSTEM - M20E, F, J, K, M, R, S, TN:	MECH	INSP
1. Inspect fuel injection system, clean screens & injector nozzles (refer to Textron Lycoming O/H Manual, Section 8 or TCM Service Manual).		
2. Check power boost system for proper door operation & seal for leaks (M20E, F, J). NOTE: Power boost system deleted on 1990 & ON.		
3. Remove, clean & inspect dry-air filter. Replace paper induction filter @ 500 hours. Recharge K & N filter @ 100 hours and replace when worn or after 25 cleanings.		
4. Inspect air induction system & alternate air valve.		
5. Inspect fuel selector valve for operation & proper indication. Verify positive valve selection while rotating fuel selector valve through selection range. Tighten/Loctite set-screw if required.		
6. Operate boost pump; check pressure & all lines for leaks.		
7. Drain Right & Left tank fuel sumps; selector fuel valve or gascolator.		
8. Check unmetered fuel pressure per Mooney Service & Maintenance Manual (M20K, M20R, M20S, M20TN).		
EXHAUST SYSTEM:		
1. Remove heater jacket & inspect exhaust system for leaks & cracks; remove exhaust cavities, inspect area.		
2. Inspect clamps for tightness at turbocharger(s) (M20K, M20M, M20TN).		
3. Inspect firewall for proper sealing & freedom from cracks.		
4. Inspect tubular engine mount for cracks; bolts & rubber mounts for security.		
GENERAL INSPECTION:		
1. Lubricate engine controls & inspect for security, full travel & free movement. Inspect for secure throttle, mixture & prop control arms and respective components.		
2. Lubricate cowl flaps & inspect for proper opening & operation. NOTE: M20C & G, 1968 & ON, cowl flaps are fixed. M20R, M20S & M20TN have no cowl flaps.		
3. Remove propeller spinner & inspect for cracks & general condition.		
4. Inspect propeller hub for grease leakage; check hub bolts & mounting bolts for proper torque; inspect blades for cracks, nicks, and dents, lubricate as needed (refer to appropriate manufacturer's handbooks).		
5. Reinstall spinner; check for correct interference fit with prop. Wrap hub with Teflon tape as required for fit (M20J, K, L). Shim interference fit between hub and bulkhead (M20M, R, S, TN).		
AIRFRAME SECTION: (Refer to Mooney Service & Maintenance Manual)		
1. Inspect exterior & interior of aircraft for general condition, collision damage, loose rivets, dents & corrosion.		
2. Inspect tubular structure lower longerons for corrosion (Reference SB M20-208[*]) (* latest revision).		
3. Inspect wings & empennage for general condition, collision damage, loose rivets, dents & corrosion.		
4. Inspect flight control surfaces for security of attachment, proper rigging, free movement, collision damage, loose rivets, dents and corrosion.		



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AIRFRAME SECTION (con't.):	MECH	INSP
5. Lubricate flight control system guide blocks, hinge points, rod end bearings & bell cranks.		
6. Inspect all wing, fuselage & empennage drain holes for obstructions.		
7. Inspect empennage trim system for proper operation & rigging.		
8. Inspect downspring end loops, cable & pulley for wear and corrosion. Comply with Bendix/King Install Bulletin 343 (inspect & lube trim carrier bearing) for A/C with KAP/KFC 100 series autopilots.		
9. Inspect flap system for proper operation & rigging; lubrication accordance with Mooney Service & Maintenance Manual.		
10. Inspect flight instruments, filters & vacuum system for proper operation, marking, and condition; clean vacuum air filter.		
11. Inspect cabin lights, circuit breakers & electrical components for proper operation.		
12. Check operation of stall warning system.		
13. Inspect P.C. system components for security, leaks & proper operation; servo seals for deterioration, all other auto-pilot components for security & proper operation. A/C equipped with Bendix/King Autopilots, comply with Honeywell Service Memo 292.		
14. Inspect vacuum step for security & proper operation; fixed step for security & damage.		
15. Inspect wing interior in fuel tank area for fuel leaks, fuel tank vents for obstructions & fuel filler caps for security & proper operation.		
16. Inspect cabin & baggage doors for condition, proper operation & sealing.		
17. Inspect windshield & windows for cracks, crazing, scratches and distortion.		
18. Inspect seats, seat latch pins, seat belts & shoulder harnesses for security, proper operation and condition. If AMSAFE Restraint equipped, diagnostic test per AAIR Supplemental Maintenance Manual every 1,000 flight-hours or annually (whichever comes first).		
19. Inspect compass & compass deviation card for proper indication & compensation. (Refer to Mooney Service Bulletin M20-150A)		
20. Inspect all radio equipment for proper installation & operation.		
21. Inspect cabin for proper sealing.		
22. Inspect oxygen system for leaks, proper ON/OFF valve operation & filler for safety of operation. Perform hydrostatic test of oxygen bottle every 3 yrs & regulator overhaul every 6 yrs. Composite bottles expire @ 15 yrs.		
23. Inspect ELT as required by FAR 91.207d(1-4).		
LANDING GEAR OPERATIONAL CHECK:		
1. Raise aircraft on jacks.		
2. Inspect brakes, hydraulic brake cylinders & hydraulic system for leaks and general condition: Service reservoir with ML-H-5606 (RED) fluid.		
3. Remove wheels, inspect, repack bearings, reinstall and safety, lubricate brake guide pins using Silicone-based lubricant. Check wheels for free rotation & proper brake action.		
4. Lubricate & inspect landing gear pivot points & moving parts.		
5. Inspect landing gear shock discs (main & nose gear) (Refer to MAC S & M manual).		
MANUAL GEAR RETRACTION SYSTEM:		
1. Raise aircraft on jacks.		
2. Check operation & rigging (pre-loads).		
3. Check warning system light & horn.		
4. Check gear down lock preload (Mains & Nose).		
5. Check landing gear doors for proper closing/rigging.		
6. Check retract lever welds for cracks.		

ELECTRIC GEAR RETRACTION SYSTEM:	MECH	INSP
1. Raise aircraft on jacks.		
2. Check operation & rigging.		
3. Check warning system lights, horn & visual indicator.		
4. Check air pressure safety switch or squat safety switch.		
5. Check main & nose gear down lock preload.		
6. Lubricate actuator gear box (Dukes & ITT actuators only)		
7. Check landing gear doors for proper closing/rigging.		
8. Check emergency landing gear extension system; extend gear using emergency gear extension system. Do not attempt gear retraction using emergency system (Refer to MAC S & M manual).		
9. Inspect shock discs (main & nose gear) in accordance with Mooney Service & Maintenance Manual.		
FIXED GEAR:		
1. Inspect landing gear fairing (M20D only).		
2. Check air seals in wheel well areas.		
POST-INSPECTION OPERATIONAL CHECK: (Refer to Mooney Owner's Manual or POH)		
1. Check propeller governor operation with engine running at 2000 RPM & pitch control at low pitch (High RPM): When propeller control is pulled out to high pitch (low RPM), engine speed should decrease at least 500 RPM.		
2. Check ease of operation for all engine controls with engine running.		
3. Check generator/alternator output & indication.		
4. Check oil pressure indication.		
5. Check fuel pressure indication.		
6. Check fuel quantity indication.		
7. Check cylinder head temperature (CHT) indication.		
8. Check oil temperature indication.		
9. Check idle RPM, idle mixture & idle cut-off.		
10. Check propeller pitch through complete range.		
11. Check operation of cabin & panel lights.		
12. Check Radios/Avionics operation.		
13. Check Auto Pilot operation.		
14. Check magneto drop and grounding circuits.		
15. Check operation of brakes.		
16. Check fuel selector valve for smooth operation.		
17. Check vacuum warning lights & instruments for proper operation.		
18. Check flap position indicator (Take-Off & Full down).		
19. Check trim position indicator and smooth operation of Trim System.		
20. Flight check gear-up warning horn at: 12" manifold pressure (MP) (M20J prior to S/N 24-3154); 14-16" MP (M20K [231, 252]) & with throttle 1/4-3/8 inch from idle position M20J (after S/N 24-1354), M20K (Encore), M20L, M20M, M20R, M20S, M20TN.		
21. Flight check aircraft flight control rigging.		
22. Flight check P.C. or other Autopilot systems for proper operation.		
23. Check cabin ventilation and heating system for carbon monoxide.		
24. Check EGT/TIT gauge and any other items of installed equipment.		
25. Check operation of remote ELT switch between top of hour and 5 min after the hour.		
26. Other checks (Specify as necessary):		

REMARKS: