

Airworthiness Directive Schedule

Aeroplanes

Mooney M20 Series

28 August 2014

- Notes**
1. This AD schedule is applicable to Mooney Aircraft Corp. M20C, M20E, M20F, M20G, M20J, M20M, and M20R aircraft manufactured under FAA Type Certificate Number 2A3.
 2. The Federal Aviation Administration (FAA) is the National Airworthiness Authority (NAA) responsible for the issue of State of Design Airworthiness Directives (ADs) for Mooney M20 series aircraft. State of Design ADs applicable to these aircraft can be obtained directly from the FAA web site. The link to the FAA web site is available on the CAA web site at http://www.caa.govt.nz/Airworthiness_Directives/states_of_design.html
 3. The date above indicates the amendment date of this schedule.
 4. New or amended ADs are shown with an asterisk *
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DCA/MY/1 Static Pressure Button - Inspection and Replacement

Applicability: Models M20, M20A, M20B, M20C, M20D and M20E with S/N listed in SB 20-118

Requirement: Mooney SB M20-118

Compliance: Every 100 hours TIS until button is replaced in accordance with SB 20-118

Effective Date: 28 February 1969

Note: Document previously referred to as Service Letter (SL). Title changed by Mooney Service Bulletin Index dated 7 January 1968

DCA/MY/2 Dukes Astronautics Fuel Pumps Part Numbers 4140-00-19, 4140-00-19A, 4140-00-21 and 4140-00-21A - Replacement

Applicability: Models M20C, M20D and M20E S/N as listed in SB M20-121B

Requirement: Mooney SB M20-121B

Compliance: As detailed

Effective Date: 28 February 1969

DCA/MY/3 Hartzell Propellers and Mooney Decal - Inspection and Modification

Applicability: Model M20E S/N 101 through 722

Requirement: Mooney SB M20-127

Compliance: Within the next 25 hours TIS

Effective Date: 28 February 1969

Note: Document previously referred to as Service Letter (SL). Title changed by Mooney Service Bulletin Index dated 7 January 1968

DCA/MY/4 Cancelled: Once only inspection, purpose fulfilled**DCA/MY/5 Fuel Line from Electric Boost Pump to Fuel Fitting Box - Modification**

Applicability: Models M20C, M20D and M20E S/N as listed in SB M20-125

Requirement: Mooney SB M20-125

Compliance: Within the next 100 hours TIS

Effective Date: 28 February 1969

Note: Document previously referred to as Service Letter (SL). Title changed by Mooney Service Bulletin Index dated 7 January 1968

DCA/MY/6 Master Power Relay Cover - Modification

Applicability: Models M20C and M20D S/N as listed in SB M20-126

Requirement: Mooney SB M20-126

Compliance: Within the next 100 hours TIS

Effective Date: 28 February 1969

Note: Document previously referred to as Service Letter (SL). Title changed by Mooney Service Bulletin Index dated 7 January 1968

DCA/MY/7 Cancelled: Purpose fulfilled

DCA/MY/8 Main Gear Retract Truss Bracket - Attachment Bolts - Replacement

Applicability: Model M20C S/N 2807 through 3466 and M20E S/N 470 through 1270

Requirement: Mooney SB M20-143

Compliance: Within the next 100 hours TIS

Effective Date: 28 February 1969

DCA/MY/9 Installation of Alternate Static Air Source Placard - Modification

Applicability: Models M20C, M20E and M20F S/N as listed in SB M20-158

Requirement: Mooney SB M20-158

Compliance: Within the next 50 hours TIS

Effective Date: 28 February 1969

DCA/MY/10 Fuel Line Routing - Modification

Applicability: Models M20E and M20F S/N as listed in SB M20-166

Requirement: Mooney SB M20-166

Compliance: Within the next 50 hours TIS

Effective Date: 28 February 1969

DCA/MY/11 Steering Horn Bolt on Nose Gear Truss - Modification

Applicability: Models M20, M20A, M20B, M20C, M20D, M20E, M20F and M20G S/N as listed in SB M20-169

Requirement: Mooney SB M20-169

Compliance: Within the next 100 hours TIS

Effective Date: 28 February 1969

DCA/MY/12 Retraction Handle and Down Lock Block - Inspection**Applicability:** All model M20C**Requirement:** An accident during landing occurred due to the retraction handle not engaging fully in the down lock block P/N 560006.

Inspect as follows:

1. With the aircraft jacked up check the retraction operation and ensure that the retraction handle engages fully in the down lock block P/N 560006 and that the pre-load of the over-centre locking mechanism is within the limits prescribed in the Mooney Service and Maintenance Manual.

2. Inspect the rear face of the bore below the latch for grooving and/or ovality and renew the down lock block if found excessive, i.e. to such extent that the retraction handle could be restricted from entering fully the down lock position.

Compliance: Before further flight and thereafter at intervals not exceeding 50 hours TIS**Effective Date:** 31 May 1969**DCA/MY/13 Throttle, Mixture and Propeller-Governor Controls - Modification****Applicability:** Models M20C, M20D, M20E, M20F and M20G S/N as listed in SB M20-174**Requirement:** Mooney SB M20-174**Compliance:** Within the next 100 hours TIS**Effective Date:** 30 April 1971**DCA/MY/14A Flight Control and Landing Gear Systems - Lubrication and Inspection****Applicability:** All model M20, M20A, M20B, M20C, M20D, M20E, M20F and M20G**Requirement:** To prevent corrosion and possible binding of the subject systems lubricate and inspect as follows:

1. Lubricate all flight control system and landing gear system rod end bearings with a silicone spray lubricant.

2. Perform a landing gear retraction test and check the landing gear rigging.

Compliance: Within the next 25 hours TIS and thereafter at intervals not to exceed 12 calendar months from the last inspection or 100 hours TIS from the last inspection whichever comes first**Effective Date:** 30 November 1973**DCA/MY/15 Flight Control and Landing Gear Systems - Modification****Applicability:** Models M20, M20A, M20B, M20C, M20D, M20E, M20F and M20G as detailed in FAA AD 72-12-2**Requirement:** FAA AD 72-12-2 amendment 39-1482**Compliance:** By 1 March 1973*Note: A copy of the reference document may be obtained from the Director*

DCA/MY/16 Landing Gear Actuator - Modification

Applicability: Models M20C, M20E and M20F with S/N listed in SB M20-191

Requirement: Mooney SB M20-191
(FAA AD 75-04-09 also refers)

Compliance: Before further flight

Effective Date: 28 February 1975

Note: Requirement notified to registered owners on effective date

DCA/MY/17 Dukes Electric Gear Actuators (P/N 4196-00-1C) and Ball Joint - Inspection and Lubrication

Applicability: All model M20 series with Dukes Electric Gear Actuator P/N 4196-00-1C

Requirement: Mooney SB M20-190

Compliance:

1. Part I of SB within the next 25 hours TIS and thereafter at intervals not exceeding 200 hours TIS.
2. Part II of SB within the next 100 hours TIS and thereafter at intervals not exceeding 100 hours TIS.
3. Part III of SB in conjunction with Part I within the next 25 hours TIS.

Effective Date: 19 May 1975

DCA/MY/18 Engine Mount Members - Inspection

Applicability: Models M20C, M20D, M20E, M20F and M20G with S/N listed in SB M20-192

Requirement: Mooney SB M20-192
(FAA AD 75-09-08 also refers)

Compliance: Within the next 50 hours TIS or before the accumulation of 450 hours TIS whichever occurs later, thereafter at intervals not exceeding 100 hours TIS. The repetitive inspection may be discontinued after rework in accordance with Mooney SB M20-192 or after installation of a new revised mount

Effective Date: 19 May 1975

DCA/MY/19A Oil Cooler - Inspection and Replacement

Applicability: Model M20E, S/N 101 through 466 and M20F, S/N 22-0001 through 22-1437 fitted with Stewart Warner oil cooler 8432H, S/N 001 through 499 or 8432F S/N 1610 through 1717

Requirement:

1. Remove cowl assembly as necessary to gain access to oil cooler.
2. Check oil cooler model and serial number, found on fluid fitting side.
3. If oil cooler is model 8432H S/N 001 through 499 or, model 8432F S/N 1610 through 1717, replace with an approved oil cooler outside the applicability range of this Airworthiness Directive.
4. Affected coolers may remain fitted for a further 5 hours TIS, subject to a satisfactory inspection for leaks prior to each flight. If any leaks are detected replace cooler before further flight.

(FAA AD 77-08-06 amendment 39-2903 also refers)

Compliance: 1. Inspection - before further flight and if cooler is in affected S/N range, prior to each flight until replaced.

2. Replacement - within the next 5 hours TIS

Effective Date: DCA/MY/19 - 28 April 1977
DCA/MY/19A - 20 July 1977

Note: Requirement notified to registered owners on effective date

DCA/MY/20B Propeller RPM Restriction - Tachometer Marking and Placard

Applicability: All model M20E and M20F with Hartzell HC-C2YK-1 () propeller

Requirement: Unless already accomplished,

1. re-mark engine tachometer face or bezel with red arcs covering the ranges 2000 to 2350 RPM and 2600 to 2700 RPM,

2. remove propeller vibration placard covering range 2100 to 2350 RPM if installed, and on instrument panel adjacent to tachometer affix placard which reads:

"AVOID CONTINUOUS OPERATION BETWEEN 2000 AND 2350 RPM"

In addition, aircraft fitted with a propeller not inspected per Hartzell SB 118A or later revision shall have, unless already accomplished, on instrument panel adjacent to tachometer a placard which reads:

"AVOID CONTINUOUS OPERATION ABOVE 2600 RPM IN FULL THROTTLE LEVEL FLIGHT"

(FAA AD 77-12-06 refers)

Compliance: By 17 April 1978

Effective Date: DCA/MY/20A - 31 August 1977
DCA/MY/20B - 17 March 1978

DCA/MY/21A Control Wheel Shaft - Inspection

Applicability: All model M20 series

Requirement: 1. Inspect per Mooney SB M20-205B.
2. Replace or modify cracked shafts with new original type or with strengthened type per SB M20-205B before further flight.

(FAA AD 77-17-04 amendment 39-3258 refers)

Compliance: At 1000 hours TTIS and thereafter at intervals not exceeding 500 hours TIS. Aircraft which have exceeded 1000 hours TIS shall be initially inspected within next 30 days unless already accomplished within last 250 hours TIS.

When new original type parts fitted, new initial inspection time is 1000 hours TIS. When strengthened type parts fitted, requirement for 500 hours inspections is removed.

Effective Date: DCA/MY/21 - 14 June 1978
DCA/MY/21A - 1 September 1978

DCA/MY/22 Main Landing Gear - Modification

Applicability: All model M20F. Model M20J S/N 24-0001 through 24-0609

Requirement: Replace side brace bolts per Mooney SB M20-212
(FAA AD 78-15-02 refers)

Compliance: By 30 November 1978

Effective Date: 1 September 1978

DCA/MY/23 Rear Spar - Inspection

Applicability: Model M20B, M20C, M20D, M20E, M20F and M20G with S/N listed in Mooney SB M20-217 and manual, or hydraulically actuated, flaps

Requirement: Inspect rear spar centre splice per Mooney SB M20-217 and repair as necessary

Compliance: At intervals not exceeding 500 hours TIS until repaired or modified. Aircraft which have exceeded 500 hours TIS shall be inspected within next 100 hours TIS or 90 days whichever is the sooner

Effective Date: 1 June 1979

DCA/MY/24 Fuel System - Modification

Applicability: All model M20E with Dukes model 4140-00-19A fuel pump

Requirement: Install fuel filter per Mooney SB M20-222 or replace fuel pump with Dukes model 1499-00-19
(FAA AD 80-13-03 refers)

Compliance: Within the next 25 hours TIS

Effective Date: 1 August 1980

DCA/MY/25 Fuel Tanks and Filter Caps - Inspection

Applicability: All model M20B, M20C, M20D, M20E and M20F

Requirement: To preclude water entrapment and fuel contamination accomplish the following:

1. Inspect fuel tank bays and rib stations per Mooney SB M20-230
2. Inspect filler caps per Mooney SB M20-229. Rectify defective installation before further flight

(FAA AD 85-24-03 refers)

Compliance: (1) and (2) - within next 50 hours TIS or by 31 May 1986, whichever is the sooner, and thereafter repeat (2) at intervals not exceeding 12 months

Effective Date: 28 February 1986

DCA/MY/26 Fuel Filler Cap Retaining Lanyard - Removal

Applicability: Model M20F all S/N, M20J S/N 24-0001 through 24-3381 and M20L S/N 26-0001 through 26-0041.

Requirement: To prevent false fuel gauge indication during flight, accomplish the following:-
Remove the lanyard (nylon type material) from the left-hand and right-hand fuel filler cap assembly per the INSTRUCTIONS section of Mooney Aircraft Corporation SB M20-259.
(FAA AD 97-26-08 refers)

Compliance: Within next 50 hours TIS.

Effective Date: 13 February 1998

DCA/MY/27 Aileron Control Links - Inspection

<u>Models</u>	<u>Serial Numbers</u>
M20B	all serial numbers
M20C	all serial numbers
M20D	all serial numbers
M20E	all serial numbers
M20F	all serial numbers
M20G	all serial numbers
M20L	all serial numbers
M20J	24-0001 through 24-3359
M20K	25-0001 through 25-1999
M20M	27-0001 through 27-0197
M20R	29-0001 through 29-0042

Requirement: To detect and correct cracked aileron control links, which could result in loss of aileron control, accomplish the following:-

1. Visually inspect the aileron control links (left-hand and right-hand) at the second 90-degree angle joint from the Heim bearing for the installation of a reinforcement gusset per Mooney SB M20-264.

If a reinforcement gusset is installed, this AD requires no further action.

2. If a reinforcement gusset is not installed, inspect, using magnetic particle methods, the aileron control links for cracks per Mooney SB M20-264.

If cracks are found, prior to further flight, replace the cracked aileron control link with an aileron control link of improved design per SB M20-264.

Note 1: Replacing both aileron control links with aileron control links of improved design may be accomplished at any time as terminating action for the repetitive inspection requirement of this AD, but must be accomplished prior to further flight on any aileron control link found cracked.

Note 2: If one aileron control link is replaced when a crack is found, the other aileron control link must still be repetitively inspected every 100 hours TIS until replacement with an improved design part.
(FAA AD 98-24-11 refers)

Compliance:

1. Within the next 100 hours TIS.
2. Within the next 100 hours TIS, and thereafter at intervals not to exceed 100 hours TIS.

Effective Date: 18 December 1998

DCA/MY/28 Turbocharger Exhaust – Modifications

Applicability: Model M20M aircraft S/N 27-0001 through 27-0321

Requirement: To prevent engine bay and possible cockpit in-flight fire, replace the radiant heat shield P/N 600182-501 and the V band clamp P/N 55677-340M or 40D21162-30M, and modify the hydraulic brake line, in accordance with Mooney Airplane Company SB M20-283A.
(FAA AD 2004-23-17 refers)

Compliance: Within 10 Hours TIS.

Effective Date: 31 March 2005

DCA/MY/29 O & N Bladder Fuel Cell – Inspection and Replacement

Applicability: Models M20B, M20C, M20D, M20E, M20F, M20G, and M20J aircraft, all serial numbers equipped with an O & N Bladder Fuel Cell installed per STC SA2277CE or STC SA2350CE.

Requirement: To prevent rainwater from entering the fuel bladders, which could result in rough engine operation or complete loss of engine power, accomplish the following:

1. On both the left and right wing, inspect the drain valve to assure that it was inserted fully into the drain nipple. Modify any drain valve found not to be inserted fully into the drain nipple before further flight.
2. On both the left and right wing do the following:
 - a) Install a foam wedge to reduce the amount of trapped fluids in the center fuel cell.
 - b) Install an anti-ice mast forward of the vent tubes to prevent icing of the fuel tank vents.
 - c) Drill a vent hole to prevent icing of the engine's crankcase breathers; and
 - d) Replace the flush style fuel caps and adapters with raised style caps and adapters.

Follow the instructions in paragraph 3. of this AD as an alternative method of compliance for replacing the flush style fuel caps.

3. Instead of replacing the flush style fuel caps as required in paragraph 2. d) of this AD, you may do a preflight fuel system check prior to each flight. To do this, you must insert the following "Pilot Operating Procedures-Preflight Fuel System Check" into the Limitation Section of the FAA-approved Airplane Flight Manual (AFM):
 - a) Place a suitable container under the fuel strainer drain outlet prior to operating the strainer drain control for at least 4 seconds. Check strainer to ensure drain is closed.
 - b) Inspect the fluid drained from the fuel strainer and each wing tank quick drain for evidence of fuel contamination in the form of water, rust, sludge, ice, or any other substance not compatible with fuel. Also check for proper fuel grade before the first flight of each day and after each refueling. If any contamination is detected, comply with paragraph (f)(4) of this AD.
 - c) Repeat steps a. & b. on each wing tank quick drain.

- d) If the airplane has been exposed to rain, sleet, or snow, or if the wing fuel tanks or fuel strainer drains produce water or other contamination, you must purge the airplane fuel system to the extent necessary to ensure that there is no water, ice, or other fuel contamination.

(FAA AD 2004-25-04 refers)

- Compliance:**
1. Before 28 January 2006
 2. Before 28 January 2006
 3. Before 28 January 2006

Effective Date: 31 March 2005

DCA/MY/30 Engine Mount Attachment – Torque and Replacement

Applicability: Model M20M aircraft, S/N 27-0317 through to 27-0355
Model M20R aircraft, S/N 29-0290 through to 29-0448

Requirement: To prevent the upper right and upper left engine mounting hardware from losing torque, which could result in a reduction in engine mount load carrying capability and could lead to engine mount failure, accomplish the following:

1. Torque the upper left and upper right engine mount attachment hardware, per Mooney Airplane Company, Inc. Service Bulletin M20-292A, dated 22 December 2006.
2. Replace the engine mount attachment hardware per SB M20-292A.

(FAA AD 2007-05-04 refers)

Note: Accomplishment of Requirement 2 is a terminating action to this AD.

- Compliance:**
1. Within the next 25 hours TIS, unless Requirement 2 of this AD has been accomplished.
 2. Within the next 100 hours TIS, unless already accomplished.

Effective Date: 26 April 2007

DCA/MY/31 Cancelled – DCA/MY/32 refers

Effective Date: 27 March 2012

DCA/MY/32 Tail Pitch Trim – Inspection and Rework

Applicability: Models M20B, M20C, M20D, M20E, M20F, M20G, M20J, M20K, M20L, M20M, M20R, M20S and M20TN aircraft, all S/N.

Note 1: This AD supersedes DCA/MY/31 to expand the AD applicability and remove the requirement to report inspection results to the manufacturer.

Requirement: To prevent failure of the tail pitch trim assembly which could result in loss of aircraft control accomplish the following:

Inspect the tail pitch trim assembly for correct configuration and attachment and inspect the huck bolt fasteners for security per the instructions in Mooney Aviation Company SB No. M20-313A dated 29 February 2012.

If the tail pitch trim assembly is found incorrectly positioned, or the tail pitch trim fitting, hinge and filler plate are found incorrectly attached, and/or the huck bolt fasteners are found loose or incorrectly installed, accomplish the instructions in Mooney SB No. M20-314A dated 29 February 2012 before further flight.

Note 2: Inspections accomplished before 27 March 2012 per the instructions in Mooney Aviation Company, Inc. SB No. M20-313, dated 7 February 2012 and corrective actions accomplished before 27 March 2012 per the instructions in Mooney Aviation Company, Inc. SB No. M20-314, dated 10 February 2012 satisfies the requirements of this AD.

(FAA AD 2012-05-09 refers)

Compliance: Within the next 10 hours TIS unless previously accomplished.

Effective Date: 27 March 2012

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* [2014-15-18](#) Empennage Attach Fittings – Inspection

Effective Date: 20 August 2014