THIS BULLETIN IS FAA APPROVED FOR ENGINEERING DESIGN

SERVICE BULLETIN M20–296
Date: June 18, 2007

SUBJECT: Circuit breaker panel wiring - removal and replacement procedure.

MODELS/ SN AFFECTED: M20R: 29-0475 thru 29-TBA
                    M20TN: 31-0032 thru 31-TBA

TIME OF COMPLIANCE: Within the next 10 hours of Flight

INTRODUCTION: The circuit breaker panel has been revised to remove and replace the specified wires in this Service Bulletin according to Mooney Engineering Group. The removed wires are smaller gauge and need to be replaced by a larger gauge to handle proper electrical current load.

INSTRUCTIONS:

1-1. Turn master switch - OFF
1-2. Remove LH and RH Tailcone access panels. and disconnect batteries.
1-3. Remove & slide out Circuit Breaker Panel and Tray Assembly. Refer to specific Service & Maintenance Manual chapter 39–10–03 for removal and installation:
   a.) From under dash area remove any cable ties from headliner, landing taxi, circuit breaker harnesses and disconnect connectors (AMP connectors) to allow tray to slide out.
   b.) Remove screws (2) from face of circuit breaker panel at upper right and left edges and from bottom mounting screws (2) at hinge assembly (ref. Figure SB M20-296-9).
   c.) Remove outer mounting nut for the “Music Jack” on face of CB Panel and push inward to allow CB Panel to slide out (ref. Figure SB M20-296-9)
   d.) Panel should now tilt down to access the tray assembly mounting screws (2). Remove the two screws from tray assembly. These screws have (2) bushings that will release when tray assembly is removed. (ref. Figure SB M20-296-9)
   e.) From under dash area slide tray out enough to remove mounting screws (2) and separate POSITRONICS™ connector located on backside of tray assembly (ref. Figure SB M20-296-9)
   f.) Disconnect Alternator wire by removing mounting nut on top of tray assembly (ref. Figure SB M20-296-9, 10).

- CAUTION -

USE CARE WHEN REMOVING CIRCUIT BREAKER TRAY ASSEMBLY, CONNECTOR TABS ON THE RECTIFIER BRIDGE ARE FRAGILE AND CAN BE BROKEN WITH EXCESSIVE FORCE AND BENDING WIRE CONNECTIONS.

   g.) Panel should now be free to slide out, note the (2) bushings between tray assembly and tubular structure will release and possibly drop out (ref. Figure SB M20-296-9).

NOTE:

THE CONTROL WHEEL WILL HAVE TO BE PULLED AFT TO REMOVE TRAY ASSEMBLY

1-4. With circuit breaker/tray assembly on workbench, remove top tray assembly screws (4) to gain access to the Emergency Bus Relays (ref. Figure SB M20-296-11).
1-5. Locate and remove jumper wire number SA10A14 and replace with (braided) jumper wire number SA10A10 from the 7.5 Circuit Breaker to 30 amp Circuit Breaker (ref. Figure SB M20-296-1, 2 & 3).
1-6. Locate and remove wire number SA08C14 with AMP extractor tool 91019–3 and replace with wire number SA08C10 from 30A Circuit Breaker to Headliner RC03B Connector Pin “2” (ref. Figure SB M20-296-1, 2).
1-7. Locate and remove wire number SA12A16 and replace with wire number SA12A12 from 5A Circuit Breaker to the Emergency Bus Relay (R1). Release the relay locking tabs during procedure (ref. Figure SB M20-296-1, 4, 7, 11).

1-8. Locate and remove wire number SA11A16 Assy (daisy chain) and replace with wire number SA11A12 Assy (daisy chain) from 20A Circuit Breaker to the Emergency Bus Relay (R2) and jumper wire to Emergency Bus Relay (R1). Release the relay locking tabs during procedure (ref. Figure SB M20-296-1, 5, 7, 11).

1-9. Locate and remove wire number SA11A16 and replace with wire number SA11A12 from 20A Circuit Breaker to the Emergency Bus Relay (R1). Release the relay locking tabs during procedure (ref. Figure SB M20-296-1, 5, 7, 11).

1-10. Locate and remove wire number SA23A16 Assy and replace with wire number SA23A12 Assy from Rectifier Bridge (D1) to the Emergency Bus Relay (R2) and daisy chain wire number SA15A20 to the PL104A POSITRONICS™ Connector Pin "B". Use a POSITRONICS™ connector pin extractor tool #9081-0-0 Rev.L to remove wire terminal from connector (ref. Figure SB M20-296-6, 7 & 8).

NOTE:
EACH POSITRONICS™ PIN WILL HAVE AN EMBOSSED LETTER ASSIGNMENT, REFER TO FIGURE M20-296-8 TO CORRECTLY IDENTIFY PIN “B” ASSIGNMENT BEFORE REMOVING WIRE.

1-10. Install any spiral wrap on wires if removed, cable tie wires in place as required.
1-11. Install Circuit Breaker Panel back in reverse order as in procedure 1-3 above.
1-12. Connect batteries and replace LH and RH Tailcone access panels.
1-13. Turn master switch – ON.
1-14. Verify proper operation of electrical equipment.
1-16. Return aircraft to service.
1-17. Procedure complete.

WARRANTY: Mooney Airplane Company, Inc. will warrant labor (approximately 4 hours), when done in accordance with the procedures of this Service Bulletin for aircraft currently covered under the Mooney Airplane Company, Inc. factory warranty program.

REFERENCE DATA: MAC Service & Maintenance Manual (applicable A/C)

PARTS LIST: Mooney Airplane Company, Inc., Parts Kit P/N: M20-296-001

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<td>T1819M4</td>
<td>CABLE TIE (SMALL)</td>
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Figure SB M20-296-1 - CIRCUIT BREAKER PANEL (BACKSIDE OF PANEL)

MOONEY AIRPLANE COMPANY, INC.  Louis Schreiner Field, Kerrville, Texas 78028 tel: 830-896-6000  www.mooney.com
Figure SB M20-296-2 – WIRING SCHEMATIC
NOTE:
Some Installations will have wire SA12A12 attached to the STBY-GYRO C/B Buss. The Circuit Breaker will have a braided jumper wire attaching to the AHRS C/B Buss.
Figure SB M20-296-5 - WIRING SCHEMATIC

REMOVE SA11A16 ASSY (DAISY CHAIN)
REPLACE WITH SA11A12 ASSY (DAISY CHAIN)

TO EMERGENCY BUS RELAY
SEE FIGURE M20-296-7

TO EMERGENCY BUS RELAY
SEE FIGURE M20-296-7

REMOVE SA11A16
REPLACE WITH SA11A12
Figure SB M20-296-6 - WIRING SCHEMATIC
Figure SB M20-296-8 - COMPONENT LAYOUT
Figure SB M20-296-9 - CIRCUIT BREAKER TRAY - SIDE VIEW
REMOVE C/B PANEL TOP SCREWS (2)

REMOVE C/B PANEL BOTTOM HINGE SCREWS (2)

REMOVE ALT WIRE FROM TRAY ASSEMBLY

Figure SB M20-296-10 – CIRCUIT BREAKER - TRAY REMOVAL
AMP CONNECTORS
(HEADLINER)
(CIRCUIT BREAKER)
(LANDING LIGHTS)

REMOVE TOP OF TRAY (4) SCREWS TO GAIN ACCESS TO RELAYS

RELEASE RELAY LOCKING TABS

Figure SB M20-296-11 - EMERGENCY BUS RELAYS