



## THIS BULLETIN IS FAA APPROVED FOR ENGINEERING DESIGN

SERVICE BULLETIN M20-291A

Date: August 18, 2006

SUBJECT: S-TEC Autopilot/Full Flap Condition

MODELS/ SN  
AFFECTED:M20M - All aircraft equipped with Garmin G1000 Integrated Avionics and S-TEC Autopilot  
M20R - Aircraft equipped with Garmin G1000 Integrated Avionics and S-TEC Autopilot, S/N  
29-0455 and prior

TIME OF

COMPLIANCE: Do not use full flaps with autopilot engaged until this service bulletin has been complied with.

INTRODUCTION: Aircraft equipped with Garmin G1000 and S-TEC autopilot will experience a hard nose down pitch condition with the flaps in full down position and the autopilot engaged. This condition is corrected by reversing position of two wires in the Flap Compensation Cable Assembly supplying the Pitch Pot and Trim Pot. By reversing the wires, the Trim Pot and Pitch Pot functions are reversed.

INSTRUCTIONS: **Read entire procedure before beginning work.**

1. Turn master switch - OFF.
2. Locate and remove two screws securing baggage compartment left side interior panels (Ref. Figure M20-291-001). Carefully, so as not to permanently crease the panel, pull the panel away from fuselage structure enough to allow the pushing/sliding of the panel forward to expose the harness where the Flap Compensation Cable Assembly connector is located.
3. Disconnect the connector.
4. On the male side of the connector, locate pins 1 and 3 (Ref. Figure M20-291-002). Depress the tabs on the pins to allow their removal from the connector housing. Relocate pin 1 (GRN-GRA) into pin 3 location. Relocate pin 3 (GRN-BLU) into pin 1 location.
5. Verify that the pins are resecured into the male connector housing so they will not back out when the connector is mated to the female half.
6. Return harness to its original position. Return the interior panel to its original position. Reinstall the two screws removed in Step 2 above.

**Ground test per the following:**

7. Turn autopilot ON, select HDG and ALT.
8. Pull back on control yokes sufficiently to relieve load such that autopilot controls are not trimming in either UP or DN direction.
9. Lower flaps to TO. The electric trim should immediately trim nose up. When flaps stop moving, the electric trim should stop.
10. Lower flaps to DN. The electric trim should immediately trim nose up. When flaps stop moving, the electric trim should stop.
11. Raise flaps to TO. The electric trim should immediately trim nose down. When flaps stop moving, the electric trim should stop.
12. Raise flaps to UP. The electric trim should immediately trim nose down. When flaps stop moving, the electric trim should stop.
13. Test fly aircraft to confirm correct response to control commands with flaps in full down position and autopilot engaged.
14. Complete log book entry.
15. Return aircraft to service.
16. Procedure complete.

WARRANTY: Mooney Airplane Company, Inc. will warrant labor:  
Approximately 1.0 hours  
when done in accordance with procedures of this Service Bulletin.

REFERENCE  
DATA:

MAC Service & Maintenance Manuals (applicable A/C)

PARTS LIST:

No parts required

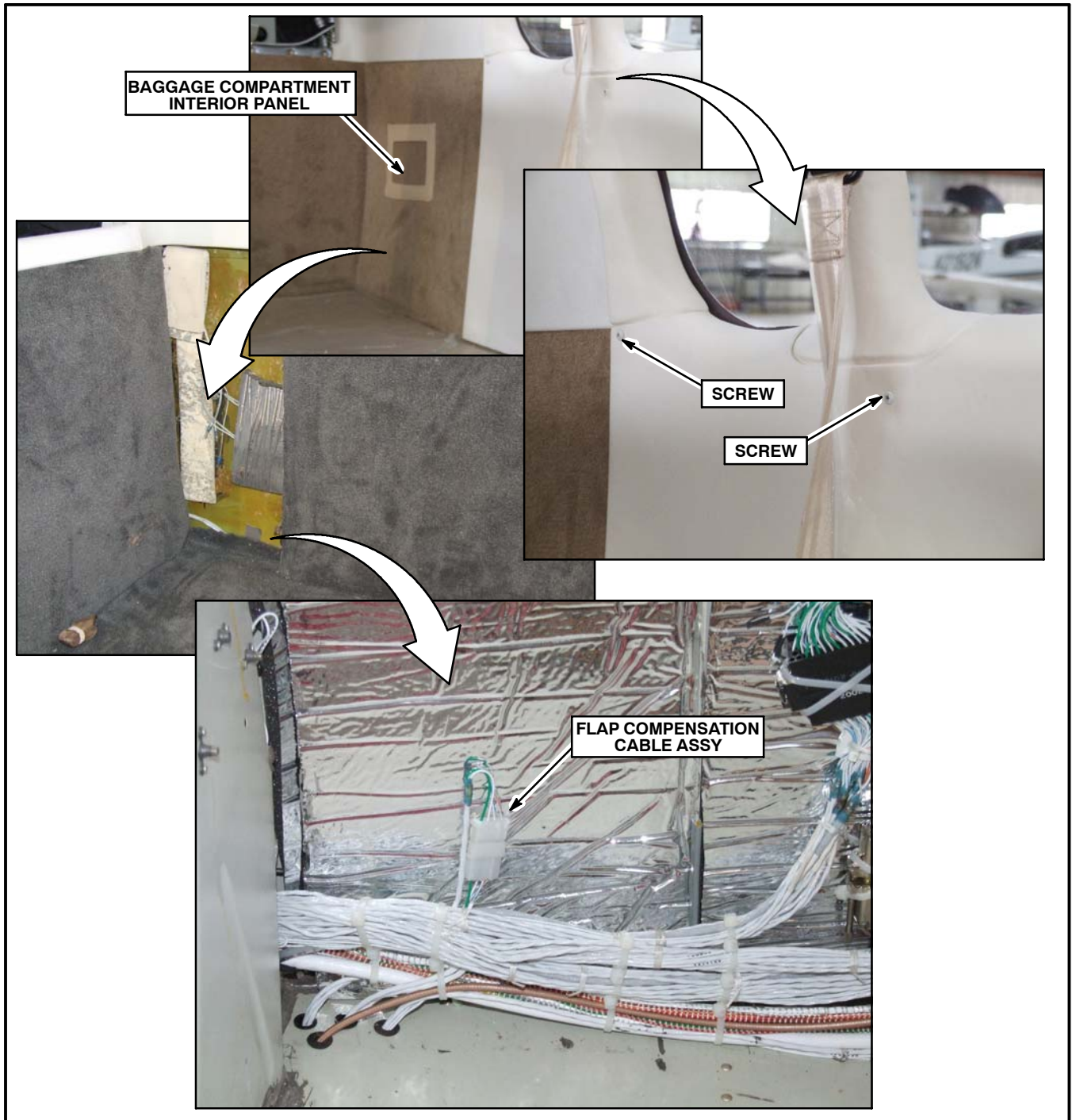


Figure SB M20-291-1

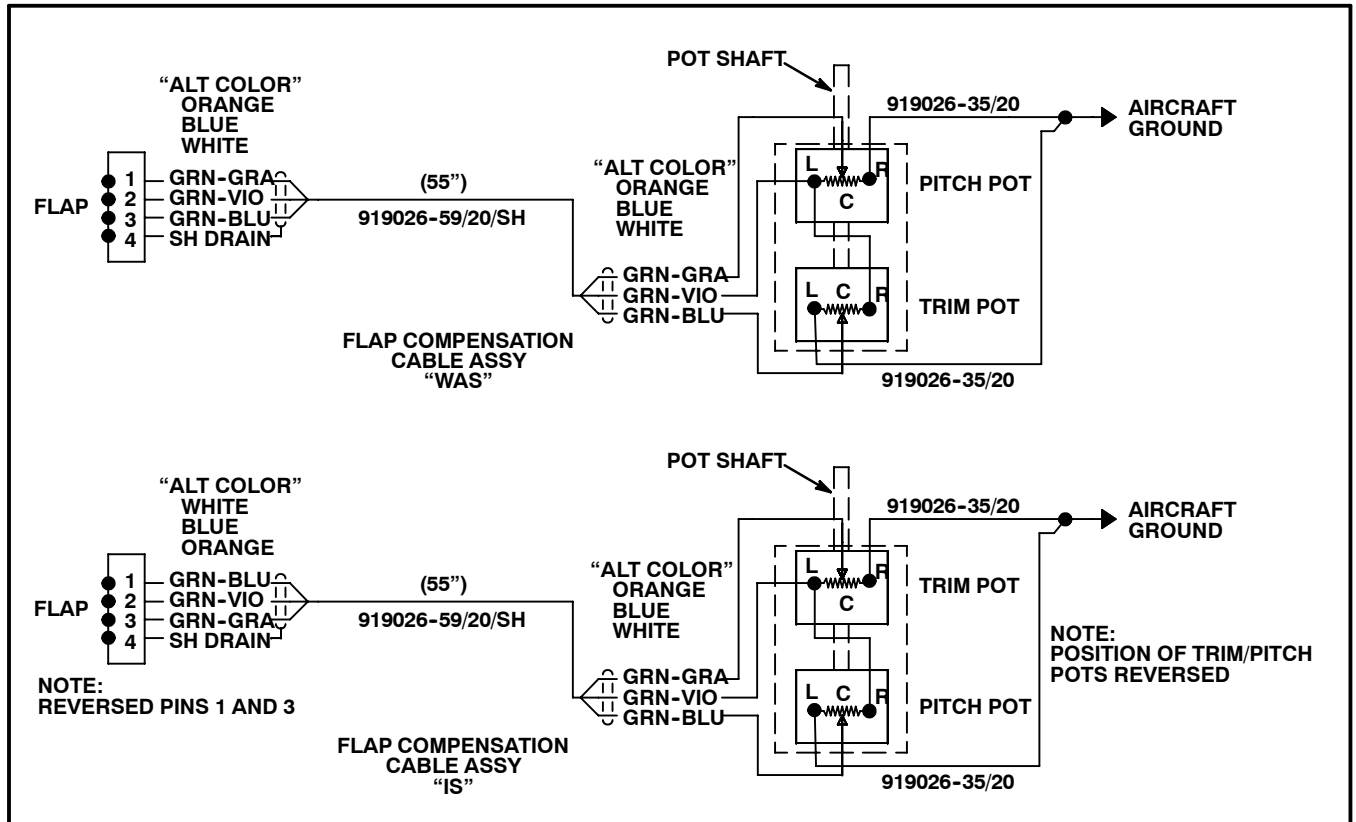


Figure SB M20-291-2