Citation SERVICE BULLETIN

SB525-34-79

TITLE

NAVIGATION - V-SPEED ENABLE AND SOFTWARE UPGRADE

EFFECTIVITY

<table>
<thead>
<tr>
<th>MODEL</th>
<th>SERIAL NUMBERS</th>
</tr>
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<tr>
<td>525 (CJ1+)</td>
<td>-0600 thru -0640</td>
</tr>
</tbody>
</table>

The equivalent of this service bulletin has been incorporated on production airplanes -0641 and On.

REASON

To add the V-Speed features and upgrade the Flight Management Computer (FMC) software for the Collins FMC-3000 system.

DESCRIPTION

This service bulletin provides parts and instructions to remove the current FMC 3000 Computer, return it to Cessna to upgrade the software and enable the V-Speed features and reinstall it.

COMPLIANCE

RECOMMENDED. This service bulletin should be accomplished at a scheduled maintenance period or phase inspection.

A service bulletin published by Cessna Aircraft Company may be recorded as “completed” in an aircraft log only when the following requirements are satisfied:

1) The mechanic must complete all of the instructions in the service bulletin, including the intent therein.
2) The mechanic must correctly use and install all applicable parts supplied with the service bulletin kit. Only with written authorization from Cessna Aircraft Company can substitute parts or rebuilt parts be used to replace new parts.
3) The mechanic or airplane owner must use the technical data in the service bulletin only as approved and published.
4) The mechanic or airplane owner must apply the information in the service bulletin only to aircraft serial numbers identified in the “Effectivity” section of the bulletin.
5) The mechanic or airplane owner must use maintenance practices that are identified as acceptable standard practices in the aviation industry and governmental regulations.

No individual or corporate organization other than Cessna Aircraft Company is authorized to make or apply any changes to a Cessna-issued service bulletin, service letter, or flight manual supplement without prior written consent from Cessna Aircraft Company.

Cessna Aircraft Company is not responsible for the quality of maintenance performed to comply with this document, unless the maintenance is accomplished at a Cessna-owned Citation Service Center.

FLIGHT CREW OPERATIONS

Refer to the attached Flight Crew Operations Summary.
Citation  

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APPROVAL

FAA approval has been obtained on technical data in this publication that affects airplane type design.

This information shall be considered an amendment to the Cessna Manufacturers Maintenance Manual and should be accomplished within the specified time requirements.

MANPOWER

<table>
<thead>
<tr>
<th>WORK PHASE</th>
<th>MAN-HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modification</td>
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MATERIAL - Cost and Availability

It will be necessary to order one or both of the parts that follow based on the configuration of the airplane.

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<th>INSTRUCTIONS/DISPOSITION</th>
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<td>822-0883-031</td>
<td>2</td>
<td>FMC-3000 Computer</td>
<td>822-0883-020, 822-0883-023, 822-0883-024</td>
<td>Return to Cessna for upgrade.</td>
</tr>
</tbody>
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NOTE: Owner/Operators must contact Citation Parts Distribution telephone number 1-316-517-6029 or e-mail CPDAvionicsteam@cessna.textron.com for advance scheduling. Instructions for shipping will be provided by the scheduler. Estimate a turnaround time of approximately four to six days. Owner/Operators must schedule in advance to guarantee four to six day turnaround time for modification of existing FMC-3000 Flight Maintenance Computer(s). Return removed components to Cessna Aircraft Company, Citation Parts Distribution, 7121 Southwest Boulevard, Wichita, Kansas 67215, USA, for modification.

* Refer to the attached Service Bulletin Supplemental Data sheet for man-hours, material cost and availability, and warranty information.

TOOLING

None

CHANGE IN WEIGHT AND BALANCE

Negligible

REFERENCES

Cessna Model 525 Maintenance Manual
Cessna Model 525 FAA Approved Flight Manual
Second Edition of the Collins FMS-3000 Operators Guide

PUBLICATIONS AFFECTED

None

ACCOMPLISHMENT INSTRUCTIONS

1. Record and keep the current FMS default settings.
   A. Apply electrical power to the airplane.
   B. Put the BATT and AVIONICS POWER switches in the ON position.
   C. Press the IDX function key.
   D. Press the NEXT key.
   E. Press the line select key next to DEFAULTS on INDEX page 2/2.
   F. Record the default information on DEFAULTS pages one through four.
      (1) Push the NEXT function key to advance through the DEFAULTS pages.

2. Record and keep the current FMS status settings.
   A. Press the IDX function key.
   B. Press the line select key next to STATUS on INDEX page 1/2.
   C. Record the status information on STATUS pages one through two.
      (1) Push the NEXT function key to advance through the STATUS pages.

3. Prepare the airplane for maintenance.
   A. Make sure that all switches are in the OFF/NORM position.
   B. Disconnect electrical power from the airplane.
      (1) Disconnect the airplane battery.
      (2) Disconnect external electrical power.
   C. Attach maintenance warning tags to the battery and external power receptacle that have "DO NOT CONNECT ELECTRICAL POWER - MAINTENANCE IN PROGRESS" written on them.

4. (Refer to Figure 1.) Remove the current FMC-3000 flight management computer.
   NOTE: If the airplane has a dual flight management system (FMS), remove both FMC-3000 flight management computers.
   A. Disengage the L IAPS, FMS 1, R IAPS, FMS 2 (if the airplane has a dual Collins FMS) and IAPS HTR circuit breakers that are in the right circuit breaker panel.
   B. Open the right nose baggage door.
   C. Remove access panel 212GZ in the right forward baggage compartment to get access to the IAPS card cage. (Refer to the Model 525 Maintenance Manual, Chapter 6, Access Plates and Panels Identification - Description and Operation.)
   D. Remove and keep the IAPS card cage cover.
   E. Hold the flight management computer(s) cam lock handles and lift the cam lock handles to the open position. Carefully pull the flight maintenance computer directly out of the IAPS card cage.

5. Send the FMC-3000 flight management computer(s) to Cessna Aircraft Company, Citation Parts Distribution, 7121 Southwest Boulevard, Wichita, KS 67215, for upgrade.
   NOTE: Owner/Operators must contact Citation Parts Distribution telephone number 1-316-517-6029 or e-mail CPDAvionicsteam@cessna.textron.com for advance scheduling. Instructions for shipping will be provided by the scheduler. Estimate a turnaround time of approximately four to six days. Owner/Operators must schedule in advance to guarantee four to six day turnaround time for modification of existing FMC-3000 flight maintenance computers. Return removed components to Cessna Aircraft Company, Citation Parts Distribution, 7121 Southwest Boulevard, Wichita, Kansas 67215, USA, for modification.
6. (Refer to Figure 1, View A-A and View B-B.) Change the value of the Word 15 Bit 2 DIP switches on both configuration strapping units.
   A. Remove both configuration strapping units (CSU-3100). (Refer to the Model 525 Maintenance Manual, Chapter 34, Integrated Avionics Processor System - Maintenance Practices.)
   B. Loosen the security screws on the front of both configuration strapping units.
   C. Slide the switch protect plate open to reveal both of the DIP switches.
   D. Change the value of the Word 15 Bit 2 DIP switch to 1.
      (1) To get the value of 1 on the DIP switch the switch should be moved towards the connector.
   E. Change the value of the Word 15 Bit 4 DIP switch to 0.
      (1) To get the value of 0 on the DIP switch the switch should be moved away from the connector.
   F. Close the switch protect plate and tighten the security screws.
   G. Install both configuration strapping units (CSU-3100). (Refer to the Model 525 Maintenance Manual, Chapter 34, Integrated Avionics Processor System - Maintenance Practices.)

7. (Refer to Figure 1.) Install the upgraded 822-0883-031 FMC-3000 Flight Management Computer.
   NOTE: Airplanes that have a dual Collins FMS will install two 822-0883-031 FMC-3000 Flight Management Computers.
   A. Hold the cam lock handles to the open position and carefully install the flight management computer into the IAPS card cage.
   B. Put the cam lock handles in the closed position.
   C. Install the kept IAPS system card cage cover.
   D. Engage the L IAPS, FMS 1, R IAPS, FMS 2 (if the airplane has a dual Collins FMS) and IAPS HTR circuit breakers that are in the right circuit breaker panel.
   E. Install access panel 212GZ in the right forward baggage compartment. (Refer to the Model 525 Maintenance Manual, Chapter 6, Access Plates and Panels Identification - Description and Operation.)

8. Remove the maintenance warning tags.

9. Connect the battery and apply external electrical power.

10. Place the BATT and AVIONICS POWER switches to ON.

11. Load the appropriate navigation database to the FMC 1 and FMC 2 (if installed) using the CPAS-3000 data loader.

12. Load the V-Speed database to the FMC 1 and FMC 2 (if installed) using the CPAS-3000 data loader.
   A. The V-Speed part number 091-4621-001 is available from the Collins FMS database website at www.rockwellcollins.com/fms.
   B. Contact Collins FMS database support at telephone number 1.319.295.5000 if the V-Speed database is not available on your account.

13. Do an operational test of the FMC-3000 computer.
   A. Push the IDX function key, then press the line select key next to STATUS.
      (1) The STATUS page will be shown.
      (2) Press the NEXT key to go to STATUS page two.
(3) Make sure that the V-Speeds database that is shown is part number 091-4621-001.

**NOTE:** If the airplane has a dual Collins FMS, you will need to make sure that the V-Speed database is correct on both FMS's.

(a) The correct time and date will be shown.

14. Restore the FMS default settings that were kept.

   A. Press the IDX function key, then press the NEXT key.
   
   B. Press the line select key next to DEFAULTS on INDEX page 2/2.
   
   C. Enter the default information that was kept earlier on DEFAULTS pages one through four.

      (1) Push the NEXT function key to advance the through the DEFAULTS pages.
      
      (2) Items in white text must be typed into the scratchpad and put in the appropriate box by pressing the line select key next to the desired field.
      
      (3) Multiple choice items may be selected by pressing the line select key next to the desired field until the desired option is highlighted in green text.

15. Make sure that Airplane Flight Manual Supplement 525FMB-S8, Revision 3 or later is put in the airplane flight manual.

16. Make sure that the airplane is equipped with the Collins FMS-3000 Pilot's Operators Guide, second edition or later. The Collins manual can be obtained from Collins or Cessna Citation Publications.

17. Make sure that the Flight Crew Operations Summary included with this service bulletin is given to the crew to inform them of the operational changes resulting from incorporation of this service bulletin.

18. Record that this service bulletin has been completed.

   A. Complete a Maintenance Transaction Report.
   
   B. Put a copy of the completed Maintenance Transaction Report in the airplane logbook.
   
   C. Send a copy of the completed Maintenance Transaction Report to: CESCOM, P.O. Box 7706, Wichita, KS 67277.
NOTE: Airplanes that are equipped with dual Collins FMS's.

Figure 1. FMC-3000 Computer Removal/Installation (Sheet 1)
Figure 1. FMC-3000 Computer Removal/Installation (Sheet 2)
FLIGHT CREW OPERATIONS SUMMARY

This summary provides additional information for the flight crew regarding operational changes as a result of accomplishment of this service bulletin. Please remove this summary from the service bulletin and give it to the flight crew. This summary is informational only and does not supersede any information in the FAA Approved Airplane Flight Manual.

1. For performance planning, calculate the planned landing weight based on measured performance, prevent CHECK FUEL AT DESTINATION messages during initial climb.
2. A new option is available to show the flight log page on the control display unit (CDU) automatically on landing. The feature is enabled/disabled on the defaults page with the FLIGHT LOG ON LDG selection.
3. When the SET POS TO GPSx data field is updated by the available GPS1 or GPS2, push the SET POS TO GPSx line select key to initialize the FMS position automatically to the present GPS position.
4. The FUEL MGMT page has been expanded to include the display of the specified range based on the true air speed (SP RNG TAS) and specific range based on ground speed (SP RNG GS).
5. The number of FIX INFO pages was increased from two to six and extended the allowed DIS CROSSING range from 199.9 to 600.0.
6. A software delay (fuel cross talk timer) was changed from 30 seconds to five seconds to decrease the time that the FUEL USED data is dashed on the FUEL MGMT page.
7. The software was corrected to clear a VNAV path inhibit condition (NO VPATH - PILOT CMD) when the autopilot mode transitions to altitude hold.
8. A hold is inserted prior to a database specified turn direction. The turn direction should be removed when the hold is first entered into the mod flight plan. Implemented fix to this problem.
9. A software improvement was made to evaluate whether the turn direction associated with a flight plan leg within a procedure should be removed from the flight plan when the flight plan changes, such as to intercept a procedure from off path.
10. VOR Usage was being controlled by the DME selection instead of the VOR selection on the VORDME CONTROL page. Definition for CHECK VOR USAGE was modified to remove the DME Selection dependency.
11. Code and requirements were added to ensure that after a cold start, VOR and DME usage are set to the default value when the airplane is in the air.
12. An improvement was made to eliminate the NAVAID NOT RECEIVED error when a navaid is tuned on the pos init page to UPDATE FROM NAVAID while use of that sensor (DME or VOR usage) is disabled.
13. A constraint error was being generated when attempting to enter an airway or procedure that was not found in the database into a flight plan. Software was improved to be tolerant of this error in datalinked flight plans.
14. Changed processing of duplicate identifiers by examining the airway which contains one of the duplicate waypoint identifiers such that the first duplicate waypoint identifier found on the airway will be inserted in the flight plan.
15. A change was made to automatically update QNH from baro set when the departure terminal area is departed (31 nm radius) instead of after 30 nm linear distance has been flown.
16. On factory starts and on ground cold starts where DME usage has been disabled prior to power down, the message DME disabled will appear on the message page, even though DME usage is yes.
17. The FMS was updated to recognize the mixed cockpit setting of the CSU's to make sure that in the mixed cockpit configuration, the FMS will still provide right side radio tuning.
18. Updates to mixed configuration requirements led to an update for the FMS to operate like a single system when configured for a mixed configuration.
19. A correction was made to the time allocated for the flight plan changes to remain in cue for crosstalk to the offside FMS.
20. A fix was implemented to prevent a manually entered VPA following an altitude constrained holding pattern from being ignored in descent path processing.
21. Previously, the routine used to search the NavDB for an ident on an airway would only search for the first ident in the list if a duplicate exists. This could lead to a NOT ON AIRWAY message if the first IDENT does not correlate to the airway exit waypoint. The search logic was updated to check the duplicate IDENT if the first one listed does not correspond to the airway exit waypoint.

22. Removed the extra holding circuit when flying parallel entry for a holding-to-course (HC) leg. Your transition to HC leg now occurs after entry without flying an unnecessary hold pattern.

23. Added CBA and CCA frequency types for Class B Airspace and Class C Airspace which will be displayed as Class B and Class C.

24. Modified the FMS output to include an additional label enabling ATC2 tuning from either FMS.

25. The FMS was updated to disable a Localizer based approach (including full ILS approaches) whenever the MAP (missed approach point) or RT (Runway Threshold) is deleted. The NO APPR message will be displayed when the approach is disabled.
Citation

SERVICE BULLETIN
SUPPLEMENTAL DATA

SB525-34-79

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MANPOWER

WORK PHASE MAN-HOURS

| MODIFICATION | 2.0 |

MATERIAL - Cost and Availability

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In cases where the required part(s) are available as exchange, order the exchange part and, upon completion, expedite the return of the removed core to avoid return penalties. Contact the Citation Parts Distribution Sales Desk for availability of exchange parts.
WARRANTY CREDIT PROGRAM

This bulletin is recommended. Eligible airplanes may qualify for parts and labor coverage, as described below.

Eligibility: Citations identified within the serial number effectivity of this service bulletin which are within the five year avionics warranty period on the original issue date of this bulletin.

Parts Coverage: Authorized Citation Service Facilities, operators, or other maintenance facilities may submit a Citation Credit Claim Form for the parts required to accomplish this bulletin.

Labor Coverage: Authorized Citation Service Facilities may submit a Citation Credit Claim Form for the labor necessary to accomplish this service bulletin. Please note Manpower Requirements for coverage guidelines. If actual labor differs from coverage guidelines, claim actual labor and detail all discrepancies.

Credit Application: All work must be completed and the Citation Credit Claim Form submitted before the date shown below. Send the Citation Credit Claim, along with any required parts (see Material Information), to the point of purchase. Parts to be returned to Citation Parts Distribution should be forwarded to:

Citation Warranty Administration
7121 Southwest Boulevard
Wichita, KS 67215
USA

Expiration: Aug 31/2009