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REVISION TRANSMITTAL

This sheet transmits Revision 2 to SEB-34-20 which:

    A.   Updates Note in Step 5 to make sure all check boxes are checked.

    B.   Adds Notes with clarification that airplanes equipped with ESP will load the E-AFCS option.

    C.   Updates PN for GIA 64 W NO2 COMM in Table 4.

    D.   Cleans up Table 4 to streamline the information.

    E.   Updates Step 7 and table in Material Information section to list additional options cards.

    F.   Updates Dual GMA PN and adds notes to use the 010-00905-20 and not the 010-00905-19 Unlock card.

NOTE: This revision replaces the original issue of SEB-34-20 in its entirety.

REVISION COMPLIANCE

NO EFFECT. Airplanes previously modified by SEB-34-20 are not affected by this revision.

LOG OF REVISIONS

Original Issue	October 7, 2020
Revision 1	April 26, 2021
Revision 2	May 4, 2021

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TITLE

NAVIGATION - G1000 NXI WITH ESP SOFTWARE UPDATE TO VERSION 2501.10 THAT TURNS OFF THE AUTOPILOT ENGAGEMENT AT LOW AIRSPEED

EFFECTIVITY

Airplanes that follow that have 2501.03 thru 2501.09 software installed.

MODEL	SERIAL NUMBERS
172S	172S12246 thru 172S12463

The equivalent of this service document has been incorporated on production airplanes 172S12464 and On.

REASON

The Electronic Stability Protection (ESP) will command a nose down pitch when the aircraft is in-air and airspeed remains below 55 KIAS for at least one second (Low Airspeed Protection). If ESP remains engaged for 10 seconds (non-consecutive) in a 20 second interval, the system will engage the Autopilot (AFCS) in LVL-LVL mode, which then enables automatic pitch trim authority. This can be unexpected when intentionally operating the airplane in some flight conditions such as during training flights with slow flight maneuvers and power off stalls, or with erroneous airspeed indications.

DESCRIPTION

This service document provides parts and instructions to update the software which prevents the system from engaging AFCS and automatic pitch trim resulting from an ESP Low Airspeed Protection command. Low Airspeed Protection remains enabled but will not engage the autopilot. Other ESP triggers such as exceeding pitch and roll limits will still engage the autopilot in LVL-LVL mode and remain unchanged. The procedures required to enable or disable ESP remain unchanged.

COMPLIANCE

MANDATORY. This service document must be accomplished at the next 100-hour or 12-month (annual-type) inspection.

A service document published by Textron Aviation 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 document, including the intent therein.

2)   The mechanic must correctly use and install all applicable parts supplied with the service document kit. Only with written authorization from Textron Aviation 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 document only as approved and published.

4)   The mechanic or airplane owner must apply the information in the service document only to aircraft serial numbers identified in the *Effectivity* section of the document.

5)   The mechanic or airplane owner must use maintenance practices that are identified as acceptable standard practices in the aviation industry and governmental regulations.

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No individual or corporate organization other than Textron Aviation is authorized to make or apply any changes to a Textron Aviation-issued service document or flight manual supplement without prior written consent from Textron Aviation.

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

APPROVAL

Textron Aviation received FAA approval for the technical data in this publication that changes the airplane type design.

FLIGHT CREW OPERATIONS

No Change

CONSUMABLE MATERIAL

No specialized consumable materials are required to complete this service document.

TOOLING

No specialized tooling is required to complete this service document.

WEIGHT AND BALANCE INFORMATION

No Change

REFERENCES

Model 172R/172S Maintenance Manual

Garmin G1000 NXI Cockpit Reference Guide for Cessna NAV III, Part Number 190-02178-02 Rev A (or latest revision)

Garmin G1000 NXI Pilot's Guide for Cessna NAV III, Part Number 190-02177-02 Rev A (or latest revision)

The following documents can be viewed by Cessna Authorized Service Facilities by going to www.garmin.com:

Garmin G1000 System Installation Manual, Part Number 190-00303-00, Revision H (or latest revision)

Garmin GDU 105X Installation Manual, Part Number 190-00303-92, Revision 5 (or latest revision)

Garmin GMA 1360 Installation Manual, Part Number 190-03813-00, Revision 2 (or latest revision)

Garmin GIA 64 Installation Manual, Part Number 190-01912-00, Revision 7(or latest revision)

Garmin GSU 75 ADAHRS Installation Manual, Part Number 190-01639-00 Revision 9 (or latest revision)

Garmin GEA 71B/C Installation Manual, Part Number 190-01807-00, Revision 4(or latest revision)

Garmin GTX 3X5 Installation Manual, Part Number 190-01499-02, Revision 5(or latest revision)

Garmin G1000 NAV III Line Maintenance Manual, Part Number 190-00352-00, Revision T (or latest revision)

Garmin G1000 NXI Supplemental Maintenance Manual, Textron Aviation Inc. NAV III Aircraft, Part Number 190-02128-04, Revision 4(or latest revision)

Cessna Service Bulletin number SB06-34-03 (Latest revision)

Cessna Service Bulletin number SB07-34-07 (Latest revision)

Cessna Service Bulletin number SB07-34-01 (Latest revision)

Cessna Service Bulletin number SB07-34-05 (Latest revision)

Cessna Service Bulletin number SB09-34-07 (Latest revision)

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Cessna Service Bulletin number SEB-34-01 (Latest revision)

Cessna Service Bulletin number SEB-34-04 (Latest revision)

Cessna Service Bulletin number SEB-34-14 (Latest revision)

PUBLICATIONS AFFECTED

None

ACCOMPLISHMENT INSTRUCTIONS

General Information

NOTE 1: If the system software or configuration fails to upload correctly during accomplishment of this Service Bulletin, do the upload again. Do not try to upload more than **five times**. If the system does not upload after the fifth attempt, refer to the Garmin Line Maintenance Manual, Revision T or later, Appendix B.4 Software / Configuration Troubleshooting. If the system still does not upload, contact Cessna Propeller Aircraft Product Support: Telephone 316-517-5800 or FAX 316-517-7271. **Do not cancel a software or configuration upload that is in progress. Let the system either successfully load or fail.**

NOTE 2: If the alert chime comes on at any time during the accomplishment of this Service Bulletin, you can go to the Alert Configuration page in the GDU page group, push the ACK softkey, this should make the chime stop.

1.   Prepare the airplane for maintenance.

    A.   Make sure that the airplane is electrically grounded.

    B.   Remove the gust lock.

    C.   Make sure that all switches are in the OFF/NORM position.

    D.   Pull the circuit breakers as follows:
- PFD Circuit Breaker on ESS BUS
- MFD Circuit Breaker on AVN BUS 2
- PFD Circuit Breaker on AVN BUS 1

    E.   Connect external electrical power to the airplane.

2.   Clear user settings as follows:

NOTE: Clearing user settings will remove user data including user waypoints, pilot selections, and stored flight plans. If desired, stored flight plans (not user waypoints or pilot selections) can be saved to an SD card. Refer to the G1000 NXI Pilot's Guide for instructions.

    A.   Put the BAT MASTER switch to the ON position.

    B.   Put the AVIONICS BUS 1 and BUS 2 switches to the ON position.

    C.   Put the STBY BATT switch to the ARM position.

    D.   Hold the CLR key on the PFD and at the same time, push in the PFD circuit breakers on the ESS BUS and AVN BUS 1.

    E.   Hold the CLR key on the MFD and at the same time, push in the MFD circuit breaker on AVN BUS 2.

    F.   When prompted to clear user setting, push the YES softkey.

        NOTE: The USER SETTINGS CLEARED will be displayed on each GDU to verify that all user data has been cleared.

    G.   Put the AVIONICS Bus 1 and Bus 2, BAT MASTER, and STBY BATT switches in the OFF position.

    H.   Pull the circuit breakers as follows:
- PFD Circuit Breaker on ESS BUS
- MFD Circuit Breaker on AVN BUS 2
- PFD Circuit Breaker on AVN BUS 1

3. Turn on the G1000 in configuration mode to verify existing options.

   A. Push and hold the ENT key on the PFD and at the same time, push in the PFD Circuit Breaker on the ESS BUS and AVN BUS 1.

      (1) When INITIALIZING SYSTEM message appears, release the ENT key.

   B. Push and hold the ENT key on the MFD and at the same time, push in the MFD Circuit Breaker on AVN BUS 2.

      (1) When INITIALIZING SYSTEM message appears, release the ENT key.

      NOTE: To stop the alert chime in configuration mode, go to GDU page group, Alert Configuration page, push the ACK softkey.

   C. (Aircraft with 2501-03 thru 2501-09 software installed.) On the PFD, turn the large FMS knob to go to the SYSTEM Page group. Turn the small FMS knob to go to the AIRCRAFT CONFIGURATION page and record the information in the Table 1.

   Table 1

AIRCRAFT REGISTRATION	
ICAO ADDRESS	
ICAO REGION	
VFR CODE	

   D. On the PFD, turn the large FMS knob to the SYSTEM page. Turn the small FMS knob to the TRANSACTION LOG.

      (1) Record the options that are loaded.

         NOTE: This recorded information will be used when loading options software after the Baseline Configuration is loaded. One quick method of recording the information is to take a picture.

         NOTE: Load this option if "XXXXX" appears in the Airframe window" can be altered to be "NOTE: Load this option if "XXXXX" appears in the Transaction Page

   E. On the PFD, turn the large FMS knob to go to the GDU page group, turn the small FMS knob to go to the AIRFRAME CONFIGURATION page. OEM Tags are displayed in the AIRFRAME window. Use the FMS knobs to activate the cursor and scroll to the AIRFRAME window. Only five OEM tags are shown at once, use the FMS knob to scroll through all available tags.

      NOTE: Table 2 represents applicable options available in the software loader card pull down menu. Use these tables to help create a list of installed options in the aircraft by identifying the installed options.

      NOTE: To stop the alert chime in configuration mode, on the MFD, use the large FMS knob to go to the GDU page group, turn the small FMS knob to the ALERT CONFIGURATION page and push the ACK softkey.

TABLE 2

INSTALLED OPTIONS	172S AIRPLANE MODEL CONFIGURATION FILE SELECTIONS - PULL-DOWN MENU
	Cessna 172S - Baseline Configuration (GIA64/GEA71B) **NOTE:** Load this option if "Cessna 172S - Baseline Configuration (GIA64/GEA71B) " appears on the Transaction Log page.
	Baseline Option - GSU75 Installation **NOTE:** Load this option if "Baseline Option - GSU75 Installation" appears on the Transaction Log page.
	Baseline Option - GTX 335 Installation **NOTE:** Load this option if "Baseline Option - GTX 335 Installation" appears on the Transaction Log page.
	Baseline Option - GTX 345 Installion, without GTS 800 **NOTE:** Load this option if "Baseline Option - GTX 345 Installion, without GTS 800" appears on the Transaction Log page.
	Baseline Option - GTX 345 Installion, with GTS 800 **NOTE:** Load this option if "Baseline Option - GTX 345 Installion, with GTS 800 " appears on the Transaction Log page. **NOTE:** All airplanes equipped with the Cessna NAV III GTS 800 TAS have a TAS circuit breaker installed on the circuit breaker panel.
	Baseline Option - GDL 69A SXM Installation **NOTE:** Load this option if "Baseline Option - GDL 69A SXM Installation" appears on the Transaction Log page.
	Baseline Option - GMA 1360 Installation **NOTE:** Load this option if "Baseline Option - GMA 1360 Installation" appears on the Transaction Log page.
	Option - GFC 700 E-AFCS Installation **NOTE:** Load this option if "Option - GFC 700 E-AFCS Installation" appears on the Transaction Log page. **NOTE:** Electronic Stability and Protection (ESP) is Enhanced Automatic Flight Control system (E-AFCS).
	Option - GFC 700 Installation **NOTE:** Load this option if "Option - GFC 700 Installation" appears on the Transaction Log page.
	Option - Enable FS510 **NOTE:** Load this option if "Option - Enable FS510" appears on the Transaction Log page.
	Option - Disable CO Guardian **NOTE:** Load this option if "Option - Disable CO Guardian" appears on the Transaction Log page.
	Option - GSR 56 Installation **NOTE:** Load this option if "Option - GSR 56 Installation" appears on the Transaction Log page.

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INSTALLED OPTIONS	172S AIRPLANE MODEL CONFIGURATION FILE SELECTIONS - PULL-DOWN MENU
	Option - GTS 800 Installation, without GTX 345 **NOTE:** Load this option if "Option - GTS 800 Installation, without GTX 345" appears on the Transaction Log page.
	Option - GTS 800 Installation, with GTX 345 **NOTE:** Load this option if "Option - GTS 800 Installation, with GTX 345" appears on the Transaction Log page.
	Option - KN63 DME Installation **NOTE:** Load this option if "Option - KN63 DME Installation" appears on the Transaction Log page.
	Option - KR87 ADF Installation **NOTE:** Load this option if "Option - KR87 ADF Installation" appears on the Transaction Log page.
	Option - CAN BUS FUEL LEVEL SENSORS **NOTE:** Load this option if "Option - CAN BUS FUEL LEVEL SENSORS" appears on the Transaction Log page.
	Cessna NAV III Delete CAN Fuel Sensor Fuel Calibration **NOTE:** Only use if you do a full fuel calibration for the airplane. Do not select this option unless a fuel calibration is necessary. Loss of fuel calibration data will result, and you will have to do a full fuel calibration.
	Option - INITIALIZE FUEL CAL DATA (only for CAN Bus sensors before fuel cal) **NOTE:** Only use if CAN Bus fuel sensors are installed and you do a full fuel calibration for the airplane. Do not select this option unless a fuel calibration is necessary. Loss of fuel calibration data will result, and you will have to do a full fuel calibration.

4.   Load the GDU (PFD and MFD) software as follows:

>   **CAUTION:** Failure to follow the instructions in exact step-by-step order could result in damage to the GDU SUPPLEMENTAL database and/or SD cards.

A.   Pull the circuit breakers as follows:
- PFD Circuit Breaker on ESS BUS
- MFD Circuit Breaker on AVN BUS 2.
- PFD Circuit Breaker on AVN BUS 1

B.   Make sure there is not an SD card installed in the PFD and MFD slots.

(1)   Remove the GDU Supplemental Data SD Cards from the bottom slot of the PFD and the MFD units.

(2)   Mark the SD Cards PFD or MFD.

(3)   If an SD card is installed in the top slot of the MFD, remove the SD card.

C.   Insert the 010-02147-08 SD Card, with the 006-B2501-10 Garmin Software, into the top card slot of the MFD.

D.   Hold the ENT key on the MFD and at the same time, push in the MFD circuit breaker on AVN BUS 2.

E.   Release the ENT key after the INITIALIZING SYSTEM message appears.

F.   Push the YES softkey to upload GDU system files when the message *DO YOU WANT TO UPDATE SYSTEM FILES?* is displayed.

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G.   If the message *DO YOU WANT TO UPDATE THE CUSTOM GRAPHIC FILES (EG, SPLASH SCREEN)?* is displayed, push the YES softkey.

H.   Push the ENT key if you are asked to *PRESS ANY SOFTKEY TO CONTINUE.*

I.   Software load to the MFD is complete if the display starts in configuration mode.

J.   Leave the MFD display powered on.

K.   Remove the 010-02147-08 SD Card, with the 006-B2501-10 Garmin Software, from the MFD and insert it into the top PFD slot.

L.   Push and hold the ENT key on the PFD and push in the PFD (ESS BUS and AVN BUS 1) circuit breakers.

M.   Release the ENT key after the INITIALIZING SYSTEM message appears.

N.   Push the YES softkey to upload GDU system files when the message *DO YOU WANT TO UPDATE SYSTEM FILES?* is displayed.

O.   If the message *DO YOU WANT TO UPDATE THE CUSTOM GRAPHIC FILES (EG, SPLASH SCREEN)?* is displayed, push the YES softkey.

P.   Push any SOFTKEY when the splash screen update is complete and you are asked to *PRESS ANY SOFTKEY TO CONTINUE.*

Q.   Software load to the PFD is complete if the display starts in configuration mode.

R.   Leave the PFD display powered on.

5.   Initial software load and configuration upload.

A.   (If not already on the SYSTEM UPLOAD page.) On the PFD turn the large FMS knob to the SYSTEM and the small FMS knob to go to SYSTEM UPLOAD.

B.   Push the small FMS knob to start the cursor.

C.   Turn the small FMS knob to highlight the applicable airplane model from the group menu option and push the ENT key.

D.   Turn the small FMS knob to highlight the applicable CESSNA (Model) BASELINE CONFIGURATION (GIA64/GEA71B) and push the ENT key.

   NOTE: Scroll through the file list and make sure all are checked or use the CHK ALL Softkey.

E.   Press the LOAD softkey to load selected software/config items.

   NOTE: Periodically monitor the loading process for failures. A green PASS message is shown beside software and configuration items that pass.

   NOTE: If the upload to a unit is unsuccessful, an UPLOAD FAIL message will be posted, and the upload will stop. A red FAIL message will show beside the software that failed. Press ENT key to acknowledge the fail message and to continue the same software load. If unable to load the software after several attempts, uncheck the software and configuration boxes using the ENT key and press the LOAD softkey to continue with the rest of the software load before troubleshooting the cause of failure.

F.   When the Upload and Crossfill Complete message is shown, push the ENT key to select OK.

   NOTE: The upload can take up to 60 minutes.

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6.   (Airplanes equipped with identified items in TABLE 2.) Do the identified uploads as follows:

      NOTE: This can take several minutes for each option.

      NOTE: There are two GFC-700 options, "Option - GFC 700 E-AFCS Installation" for airplanes equipped with ESP and "Option - GFC 700 Installation" for all other airplanes. Airplanes equipped with ESP, make sure to load the "Option - GFC 700 E-AFCS Installation".

      NOTE: Electronic Stability and Protection (ESP) is Enhanced Automatic Flight Control system (E-AFCS).

      WARNING: **Do not configure an option that is not installed on the airplane. Configuring an option not installed on the airplane requires restarting the software load from Step 2 with clearing user settings.**

    A.   Turn the large FMS knob to go to the ITEM menu.

      NOTE: If necessary, push the FMS knob to select the cursor.

    B.   Turn the small FMS knob to expand the ITEM pull down menu field and highlight one of the software uploads that is applicable for your airplane.

    C.   Push the ENT key.

    D.   Push the LOAD softkey to install the software.

    E.   Monitor the upload status. When the UPLOAD and CROSSFILL COMPLETE message is shown, push the ENT key to select OK.

    F.   Do Steps 6A thru 6E again until all software uploads identified in TABLE 2 are complete.

    G.   Press the FMS knob to un-select the cursor.

7.   (Refer to the table at the end of the Material Information section of this document.) Check the Aircraft Software Sleeve in the Pilot's Operating Handbook for feature unlock cards, unlock these features as follows:
- (Airplanes with TAWS-B (enable card 010-00330-51).) Enable the Garmin G1000 Terrain Awareness Warning System Class-B (TAWS-B). (Refer to SB06-34-03, original issue or latest revision).
- (Airplanes with Garmin Search and Rescue (enable card 010-00330-52).) Enable Garmin G1000 Search and Rescue. (Refer to SB07-34-05 original issue or latest revision).
- (Airplanes with Chartview (enable card 010-00330-53).) Enable the Garmin G1000 NAV III Avionics Chartview Option. (Refer to SB07-34-01, original issue or latest revision).

      NOTE: There will be no need to update the chart files on the supplemental database cards as described in SB07-34-01.
- (Airplanes with Garmin Synthetic Vision (enable card 010-00330-54).) Enable the Garmin Synthetic Vision Option. (Refer to SB09-34-07 original issue or latest revision).
- (Airplanes with the Max-Viz Enhanced Vision System (EVS) (these airplanes have an EVS camera installed outboard of right WS 100.00) (enable card 010-00330-58).) Enable Garmin G1000 EVS. (Refer to SEB-34-04 original issue or latest revision).
- (Airplanes with Garmin Enhanced Search and Rescue (enable card 010-00330-59).) Enable Garmin G1000 Enhanced Search and Rescue. (Refer to SEB-34-01 original issue or latest revision).
- (Airplanes with Garmin Enhanced AFCS Unlock (enable card 010-00330-5B).) Enable Garmin Enhanced AFCS.
- (Airplanes with Garmin Surface Watch (enable card 010-00330-KA).) Enable Garmin G1000 Surface Watch.
- (Airplanes with ADS-B Out (enable card 010-00905-06).) Enable ADS-B Out. (Refer to SEB-34-14 original issue or latest revision).

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- (Airplanes with Dual GMA Audio Panels (enable card 010-00905-20).) Enable Dual GMA Audio. Discard previous enable SD Card 010-00905-19.

    NOTE: Cessna Model 172S airplanes with dual GMA Audio panels will need to use the new 010-00905-20 Enablement card. The previous 010-00905-19 card will not work with 2501.10 software load.

A. Pull the circuit breakers as follows:
    - PFD Circuit Breaker on ESS BUS
    - PFD Circuit Breaker on AVN BUS 1

B. Remove the SD Card from the top slot of the displays.

C. Put an option or unlock SD Card in the top slot of the PFD.

D. Push and hold the ENT key on the PFD and at the same time, push in the PFD Circuit Breaker on AVN BUS 1 and ESS BUS.

    (1) When INITIALIZING SYSTEM message appears, release the ENT key.

E. Push the small FMS knob to activate the cursor. Turn the small FMS knob to highlight the drop-down menu option for the option card installed in the PFD top slot. Push ENT.

F. Turn the small FMS knob to highlight the drop-down menu option for the option card installed in the PFD top slot. Push ENT then push the LOAD softkey.

G. When the UPLOAD AND CROSSFILL COMPLETE message is shown, push ENT to

H. Do Steps 7A thru 7.G. for each option and unlock card.

    NOTE: To stop the alert chime in configuration mode, go to GDU page group, Alert Configuration page, push the ACK softkey.

8. Configure the transponder as follows:

    A. On the PFD, turn the large FMS knob to go to the SYSTEM page group. Turn the small FMS knob to go to the AIRCRAFT CONFIGURATION page.

    B. Verify aircraft registration, ICAO address, ICAO REGION, and VFR code are correct in the AIRCRAFT CONFIGURATION window. Verify that GTX1 and GTS (if installed) are checked green in the LRU CONFIGURATION STATUS window. If all are correct, go to Step 8.E.

    C. Activate the cursor to highlight and enter the aircraft registration, ICAO address, and VFR code using the FMS knob. Press the ENT key after each entry.

    D. Press, one at a time, the "SET GTX1" and "SET GTS" (if installed) softkeys, then select "OK".

        (1) Make sure GTX1 and GTS (if installed) are checked green.

    E. Turn the large FMS knob to go to the GTX page group. Turn the small FMS knob to go to the TRANSPONDER CONFIGURATION page.

    F. Make sure the address type is correct in the aircraft configuration field window.

        (1) (If the address type is correct.) Go to Step 9.

        (2) (If the address type is not correct.) Do Steps 8.A. thru 8.E.

    G. Activate the cursor to highlight and enter the address type with the FMS knob. Press the ENT key after each entry.

    H. Press the "SET>ACTV" softkey.

9. Turn the large FMS knob to go to the SYSTEM page group, turn the small FMS knob to go to the SYSTEM UPLOAD page, push the UPDT CFG softkey and then the ENT key to select YES to update the PFD Config module, and push the ENT key to select OK when complete.

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10. Cycle electrical power as follows:

NOTE: You do not need to disconnect external electrical power.

A. Remove the SD Card from the top slot of the displays.

B. Pull the circuit breakers as follows:
- • PFD Circuit Breaker on ESS BUS
- • MFD Circuit Breaker on AVN BUS 2.
- • PFD Circuit Breaker on AVN BUS 1

C. Push and hold the ENT key on the PFD and at the same time, push in the PFD Circuit Breaker on AVN BUS 1 and ESS BUS.

(1) When INITIALIZING SYSTEM message appears, release the ENT key.

D. Push and hold the ENT key on the MFD and at the same time, push in the MFD Circuit Breaker on AVN BUS 2.

(1) When INITIALIZING SYSTEM message appears, release the ENT key.

NOTE: To stop the alert chime in configuration mode, go to GDU page group, Alert Configuration page, push the ACK softkey.

11. Complete the basic software load and system verification procedures as follows:

A. Do the manifest configuration verification as follows:

(1) On the PFD, turn the large FMS knob to go to the SYSTEM group. Turn the small FMS knob to go to the MANIFEST CONFIGURATION page.

(2) Make sure that the software and version shown in TABLE 3 are shown in the SYSTEM field window at the top of the screen.

TABLE 3

SOFTWARE PART NUMBER	FILE VERSION
006-B2501-10	2501-10

(3) Make sure that the applicable information in TABLE 4 is shown in the MANIFEST field window.

NOTE: This data file is near the bottom of the list.

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TABLE 4 GARMIN EQUIPMENT/SOFTWARE LIST

HARDWARE		SOFTWARE
DESCRIPTION	PART NUMBER	FILE VERSION
GIA 64W NO 1	011-03711-00	2.03.1
GIA 64W NO 2	011-03711-00	2.03.1
GDU 1054B PFD or GDU 1050 PFD	011-03470-70 or 011-03470-00	20.83
GDU 1054B PFD or GDU 1050 PFD	011-03470-70 or 011-03470-00	20.83
GMA 1360 AUDIO PANEL	011-03568-00	5.18D
GEA 71B EAU	011-03682-00	2.10
GMU 44 MAGNETOMETER	011-00870-10	2.00
GSU 75 ADAHRS	011-03094-00	2.06
GTX 335R (Optional)	011-03301-00	2.12
GTX 345R (Optional)	011-03303-00	2.12
GTS 800 TAS (Optional)	011-01356-00	4.11
GDL 69A SXM DATALINK (Optional)	011-03177-10	5.20
GSA 81 PITCH SERVO	011-00878-20	3.41
GSA 81 ROLL SERVO	011-00878-20	3.41
GSA 81 PITCH TRIM SERVO	011-00878-20	3.41
FLIGHT STREAM 510 (Optional)	011-03595-00	2.51 or greater version
GRS 56 IRIDIUM (Optional)	011-02268-01	N/A

12. Pull the circuit breakers as follows:
    - PFD Circuit Breaker on ESS BUS
    - MFD Circuit Breaker on AVN BUS 2.
    - PFD Circuit Breaker on AVN BUS 1

13. If the message *DO YOU WANT TO UPDATE THE CUSTOM GRAPHIC FILES (EG, SPLASH SCREEN)* in Step 4.G. did not display on the MFD or PFD during the software load, do the steps that follow on the MFD or PFD (as applicable) to update the splash screen.

    A. Make sure the SD loader card is installed in the top slot of the display.

    B. Make sure the circuit breakers are pushed in as follows:
       - PFD Circuit Breaker on ESS BUS
       - MFD Circuit Breaker on AVN BUS 2.
       - PFD Circuit Breaker on AVN BUS 1

    C. Put the BAT MASTER switch to the ON position.

    D. Put the AVIONICS BUS 1 and BUS 2 switches to the ON position.

    E. Put the STBY BATT switch to the ARM position.

    F. Push the NO softkey when the message *DO YOU WANT TO UPDATE SYSTEM FILES* is displayed.

    G. When the message *DO YOU WANT TO UPDATE THE CUSTOM GRAPHIC FILES (EG, SPLASH SCREEN)* is displayed, push the YES softkey.

    H. Push the ENT key when the splash screen update is complete and you are asked to *PRESS ANY SOFTKEY TO CONTINUE.*

I.   When the display splash screen files update is complete, put the AVIONICS and BAT MASTER switches in the OFF position.

J.   Remove the SD loader card.

K.   Pull the circuit breakers as follows:
  • PFD Circuit Breaker on ESS BUS
  • MFD Circuit Breaker on AVN BUS 2.
  • PFD Circuit Breaker on AVN BUS 1

14. Do the system checks as follows:

A.   Install the GDU Supplemental Data SD Cards in the bottom slot on the PFD and the MFD units.

B.   If applicable, install the Electronic Checklist SD Card in the top slot on the MFD.

C.   Put the BAT MASTER switch to the ON position.

D.   Put the AVIONICS BUS 1 and BUS 2 switches to the ON position.

E.   Put the STBY BATT switch to the ARM position.

F.   Make sure that no failure related G1000 NXI system messages, alerts, annunciations, or Red X's are shown on the PFD or the MFD on the AUX-SYSTEM STATUS page.

NOTE: Reference Garmin Line Maintenance Manual 190-00352-00 Revision T or latest revision for troubleshooting instructions.

NOTE: Airplanes that do not have the GDL 69A XM Datalink installed, if a FAILED DATA PATH system message is displayed after G1000 system restarts, the error can be cleared with the steps that follow:
  • Start the system in configuration mode.
  • On the PFD, turn the large FMS knob to go to the SYSTEM PAGE group.
  • Turn the small FMS knob to go to the SYSTEM DATA PATH CONFIGURATION page and then push the HSDB softkey.
  • Push the FMS knob to highlight the cursor and use the large FMS knob to select the GDL69 field on the MFD PORT 3 entry.
  • Turn the small FMS knob on the PFD to scroll the drop-down menu to the NONE entry.
  • Push the ENT key to select the NONE entry for the MFD HSDB Port 3.
  • Reboot the system in normal mode and verify the FAILD DATA PATH system message has cleared.

G.   (If the gust lock is installed.) Remove the Gust lock.

H.   Do the GFC-700 Autopilot Operation Checks in accordance with Section 4.16 of the Garmin G1000 NAV III Line Maintenance Manual. (Refer to the Garmin G1000 NAV III Line Maintenance Manual, Part Number 190-00352-00, Revision T or latest revision.)

15. Put the AVIONICS, BAT MASTER, and STBY BATT switches in the OFF position.

16. (After all systems have powered down.) Put the STBY BATT switch in the ARM position.

17. Put the BAT MASTER switch to the ON position.

18. Put the AVIONICS BUS 1 and BUS 2 switches to the ON position.

19. (After the systems are up.) Check for green boxes on the LRU's on the system status page.

A.   Push the small FMS knob to start the cursor.

B.   Turn the small FMS knob to scroll through to the LRU window.

C.   Scroll through each item in the LRU field to do a check for the green boxes.

NOTE: If any LRU's do not have a green box, the system has not loaded correctly, load the software again. If the software fails to load after five attempts, contact Textron Aviation Propeller Aircraft Customer Service.

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D.   Push the small FMS knob to stop the cursor.

20. (Airplanes with Dual GMA 1347 Audio Panels (GMA 1347 CAP Configuration Software) (These airplanes have a second GMA 1347 audio panel installed).) Do the configuration of the dual audio panels. (Refer to the Garmin Installation Bulletin No.: 0614 or latest revision.)

21. Put the AVIONICS, BAT MASTER, and STBY BATT switches in the OFF position.

22. Remove external electrical power.

23. (If the gust lock was removed.) Install the gust lock.

24. (After this service bulletin is complete.) Remove, destroy, and discard the old Cessna NAV III Installation Software SD Card from the sleeve in the Pilot's Operating Handbook (POH).

   NOTE: This will eliminate the possibility of reloading the incorrect software later.

25. (When not in use.) Put the 010-02147-08 SD Card, with the 006-B2501-10 Garmin Software, in the Pilot's Operating Handbook sleeve for the NAV III Garmin Software.

   NOTE: The 010-02147-08 SD Card, with the 006-B2501-10 Garmin Software can be ordered through Textron Aviation Parts Distribution. **You must use the new SD card when you do the software upgrade on the airplane.**

26. Remove from the airplane the 190-02178-02 (original issue) version Garmin G1000 Integrated Flight Deck Cockpit Reference Guide and discard.

27. Put the 190-02178-02 Rev A, Garmin G1000 Integrated Flight Deck Cockpit Reference Guide for Cessna NAV III, in the airplane.

28. Put the 190-02128-02 Rev 4, FAA Approved Airplane Flight Manual Supplement, G1000 NXI Systems for Textron Nav III Series Aircraft - SSV 2501.09+, in the Airplane Pilot Operating Handbook (POH).

29. Make an entry in the airplane logbook that states compliance and method of compliance with this Service Bulletin.

MATERIAL INFORMATION

Order the parts below to install this service bulletin:

NEW P/N	QUAN-TITY	KEY WORD	OLD P/N	INSTRUCTIONS/ DISPOSITION
010-02147-08	1	System Software SD Card with Garmin Software 006-B2501-10	006-B2501-09 or prior revision	Destroy and Discard Old Install new in POH Sleeve
190-02178-02 Rev A	1	Garmin G1000 NXI Integrated Flight Deck Cockpit Reference Guide for Cessna NAV III	Same	Remove and Replace

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NEW P/N	QUAN-TITY	KEY WORD	OLD P/N	INSTRUCTIONS/DISPOSITION
190-02128-02 Rev 4	1	FAA Approved Airplane Flight Manual Supplement, G1000 NXi System for Textron Nav III Series Aircraft - SSV 2501.09+	Same	Remove Old Install New
010-00905-20	1	SD CARD, Dual GMA Enablement (172S with dual GMA Audio Panels)	010-00905-19	Remove Old Install New

NOTE: Cessna Model 172S airplanes with dual GMA Audio panels will need to use the new 010-00905-20 Enablement card. The previous 010-00905-19 card will not work with 2501.10 software load.

In addition to the above parts, the parts that follows are optional and can be ordered at the discretion of the owner/operator.

NEW P/N	QUANTITY	KEY WORD	OLD P/N	INSTRUCTIONS/DISPOSITION
190-02177-02 Rev A	1	Garmin G1000 NXI Pilot's Guide for Cessna NAV III	190-02177-02	(Optional) Remove and Replace

* Please contact a Textron Aviation Authorized Service Facility for current cost and availability of parts listed in this service document.

Based on availability and lead times, parts may require advanced scheduling.

The unlock SD cards that follow are for reference to assist with identifying the Unlock SD cards.

NEW P/N	KEY WORD
010-00330-51	SD Card, GDU10XX, TAWS Unlock
010-00330-52	SD CARD, GDU10XX, SAR Unlock
010-00330-53	SD CARD, GDU10XX, Chart Unlock, Light AC
010-00330-54	SD CARD, GDU10XX, SVT Unlock, 1 PFD
010-00330-58	SD Card, Enhanced Vision System (EVS)
010-00330-59	SD CARD, G1000, Enhanced SAR Unlock
010-00330-5B	SD CARD, GDU1XXX, Enhanced AFCS Unlock
010-00330-KA	SD CARD, G1000, Surface Watch Enablement
010-00905-06	SD Card, ADS-B Unlock
010-00905-20	SD Card, Dual GMA Audio Panels Enablement

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TITLE

NAVIGATION - G1000 NXI WITH ESP SOFTWARE UPDATE TO VERSION 2501.10 THAT TURNS OFF THE AUTOPILOT ENGAGEMENT AT LOW AIRSPEED

TO:

Cessna Model 172S Aircraft Owner

REASON

The Electronic Stability Protection (ESP) will command a nose down pitch when the aircraft is in-air and airspeed remains below 55 KIAS for at least one second (Low Airspeed Protection). If ESP remains engaged for 10 seconds (non-consecutive) in a 20 second interval, the system will engage the Autopilot (AFCS) in LVL-LVL mode, which then enables automatic pitch trim authority. This can be unexpected when intentionally operating the airplane in some flight conditions such as during training flights with slow flight maneuvers and power off stalls, or with erroneous airspeed indications.

COMPLIANCE

MANDATORY. This service document must be accomplished at the next 100-hour or 12-month (annual-type) inspection.

LABOR HOURS

For planning purposes only:

WORK PHASE	LABOR-HOURS
Loading Software	2.5
Configuration Load for 172S equipped with dual audio panels.	0.2

MATERIAL AVAILABILITY

PART NUMBER	AVAILABILITY	COST
010-02147-08	*	*
190-02128-02 Rev 4	*	*
190-02178-02 Rev A	*	*
190-02177-02 Rev A	*	*
010-00905-20 (For 172S with Dual Audio Panels)	*	*

* Please contact a Textron Aviation Authorized Service Facility for current cost and availability of parts listed in this service document.

Based on availability and lead times, parts may require advanced scheduling.

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WARRANTY

This service document is *mandatory*. Eligible airplanes may qualify for parts and labor coverage to the extent noted in the *Labor Hours* and *Material Availability* sections of this document.

Eligibility: Airplanes identified within the serial number effectivity of this service document must have active Standard warranty coverage on the original issue date of this document and the coverage must be active on the day the work is accomplished.

Parts Coverage: Textron Aviation-owned and Textron Aviation-authorized Service Facilities, operators, or other maintenance facilities may submit a claim for the parts required to accomplish this service document as defined in the *Material Availability* section of this document.

Labor Coverage: Textron Aviation-owned and Textron Aviation-authorized Service Facilities rated to perform maintenance on the specific model of Cessna Aircraft may submit a claim for the labor necessary to accomplish this service document as defined in the *Labor Hours* section of this document.

Credit Application: After this service document has been accomplished, a claim must be submitted to Textron Aviation within 30 days of the service document completion. Claims for compliance of this service document are to be filed as a W4 type claim.
Please submit your claim form online at *ww2.txtav.com/Parts* or email the completed Textron Aviation Claim Form to *warranty@txtav.com*. If submitted on-line a Return Authorization will be provided. If a paper claim is submitted your claim will be entered into the system and a Return Authorization will be sent to you.
The Return Authorization must accompany any required return parts (see *Material Availability*), to the point of purchase.
Parts to be returned to Textron Aviation Parts Distribution should be forwarded to:

Textron Aviation Parts Distribution
Warranty Administration
285 South Greenwich Road
Bldg B89, Docks 1-4
Wichita, KS 67206
USA

Expiration: October 7, 2021 (after this date the owner/operator assumes the responsibility for compliance costs)

Textron Aviation reserves the right to void continued airplane warranty coverage for the parts affected by this service document until the service document is accomplished.

NOTE: As a convenience, service documents are now available online to all our customers through a simple, free-of-charge registration process. If you would like to sign up, please visit the Customer Access link at www.txtavsupport.com to register.