

TITLE

NAVIGATION - TRANSMITTAL OF GARMIN SB 2045, GRS 77 SOFTWARE VERSION 3.04 - PITCH/ROLL OFFSET CALIBRATION PROCEDURE

EFFECTIVITY

Airplane serial numbers that follow and have software version 563.32, 563.34, or 563.35 installed.

MODEL	SERIAL NUMBERS
172R	17281241 thru 17281622
172S	172S9810 thru 172S11435, 172S11577 thru 172S11758
182T	18281228, 18281318 thru 18282468
T182	T18208232 thru T18209100
206H	20608216 thru 20608353
T206H	T20608450 thru T20609132, T20609176 thru T20609249

The equivalent of this service document has been incorporated on production airplanes 172S: 172S11759 and On, 182T: 18282469 and On, T206H: T20609250 and On.

REASON

To transmit Garmin Service Bulletin NO.: 2045 Rev A, GRS 77 Software Version 3.04 - Pitch/Roll Offset Calibration Procedure (G1000 with single GRS and dual display).

DESCRIPTION

This service document transmits Garmin Service Bulletin NO.: 2045 Rev A, GRS 77 Software Version 3.04 - Pitch/Roll Offset Calibration Procedure (G1000 with single GRS and dual display).

NOTE: Refer to the attached Garmin Service Bulletin NO.: 2045 Rev A, (or later revision) for additional information. The procedures may be useful when troubleshooting an AHRS or Magnetometer.

COMPLIANCE

INFORMATIONAL. This service document is for informational purposes only.

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- 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.

October 28, 2020

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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.

CONSUMABLE MATERIAL

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

TOOLING

No specialized tooling is required to complete this service document.

REFERENCES

Garmin Service Bulletin NO.: 2045 Rev A (or later revision), GRS 77 Software Version 3.04 - Pitch/Roll Offset Calibration Procedure (G1000 with single GRS and dual display)

NOTE: To make sure all publications used are complete and current. Refer to www.txtavsupport.com.

PUBLICATIONS AFFECTED

None



1200 E. 151st Street
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913-397-8200

SERVICE BULLETIN

NO.: 2045 Rev A

TO: Textron Aviation
DATE: March 18, 2020
SUBJECT: GRS 77 Software Version 3.04 - Pitch/Roll Offset Calibration Procedure
(G1000 with single GRS and dual display)

PRODUCTS AFFECTED

GRS 77 units with Software Version 3.04, installed as part of a G1000 with single GRS and dual display are affected.

PURPOSE

Under rare circumstances (such as unusual jumps in GPS velocity) an AHRS reset may occur if the Pitch/Roll offset procedure was performed without valid GPS signal.

DESCRIPTION

To prevent an AHRS reset, Garmin recommends the post installation Pitch/Roll Offset procedure documented in the INSTRUCTIONS Section of this service bulletin.



NOTE

After successful completion of the Pitch/Roll Offset procedure documented in the INSTRUCTIONS Section of this bulletin, the post installation Magnetometer Calibration procedure must be performed. Refer to the applicable maintenance manual.

WARRANTY INFORMATION

This modification is not warranty reimbursable.

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INSTRUCTIONS



NOTE

Ensure aircraft is in a position with GPS coverage before performing the procedure. This can be accomplished by performing the procedure with the aircraft outside a hangar on a ramp area, or inside a hangar with GPS repeaters in use.



NOTE

This procedure must be carried out with the engine off.

GRS / GMU CALIBRATION

SELECT GRS UNIT: GRS77 #1 SELECT PROCEDURE: PITCH / ROLL OFFSET COMMUNICATION STATUS: GPS, AIR DATA, MAGNETOMETER

BEFORE CALIBRATION

- 1 Level the aircraft to within 0.25 deg of zero-pitch and zero-roll.
- 2 Ready to enter the GRS77 AHRS Ground Pitch / Roll Aircraft Level Compensation Mode.

CALIBRATE

CALIBRATION PROCEDURE

For calibration, the operator must verify that each of the following statements is true.
Select CONFIRM AIRCRAFT IS LEVEL to acknowledge.
The calibration status will then be displayed.

- 1 The aircraft pitch is level.
- 2 The aircraft roll is level.
- 3 The aircraft is motionless.

CONFIRM AIRCRAFT IS LEVEL

1. Start the system in configuration mode.
2. Level the aircraft to within $\pm 0.25^\circ$ of zero pitch and zero roll.
3. Select the GRS Page Group.
4. Display the GRS/GMU Calibration page.
5. Unlock page by pressing the following softkeys in sequence:
 - a) Softkey 9
 - b) Softkey 10
 - c) Softkey 11
 - d) Softkey 12
6. Power off the GRS and GDC units by pulling the circuit breakers.

7. While remaining in configuration mode on PFD, turn off MFD by pulling the circuit breaker.
8. Set the Display Backup button on the GMA panel to the non-depressed state.
9. Restart the MFD in normal mode.
10. Confirm heading and attitude (pitch/roll) information are not displayed (red X).
11. Power up GRS 1 while leaving GDC powered off.
12. Make sure GPS status in the PFD page of "GRS / GMU CALIBRATION" is a green checkmark.
13. After 50-70 seconds, make sure valid Pitch and Roll are displayed on MFD.



NOTE

If valid Pitch and Roll are not displayed after 90 seconds, the GRS 77 AHRS is not receiving valid GPS signal.

14. Using the GDU controls on the PFD in config mode highlight GRS 1.
15. Select GRS 1 for calibration.
16. Touch Enter after selecting GRS 1 to calibrate. The select procedure field is now blinking. The small right knob can now be used to select which calibration/validation procedure to run.
17. Select PITCH/ROLL OFFSET, then touch Enter. If the PITCH/ROLL OFFSET selection is still blinking, touch Enter again.
18. Follow the checklist items displayed on the PFD and touch Enter as each one is completed or confirmed. When the CALIBRATE field is blinking, touch Enter to begin the procedure.
19. After several seconds, a new checklist appears in the lower half of the PFD. Touch Enter as each item is confirmed. When the CONFIRM AIRCRAFT IS LEVEL field is blinking, touch Enter to continue.
20. The result of the pitch/roll offset compensation is displayed on the PFD. If successful, the AHRS records the required pitch and roll offsets, informs the operator of a successful conclusion and returns to normal operation.
21. Touch Enter to conclude this procedure.



NOTE

As documented in the applicable maintenance manual, Calibration Procedure A-1 must be successfully completed prior to Calibration Procedure B. If A-1 is repeated, then Procedure B must also be repeated.

RESOLUTION

This issue has been fixed in GRS 77 software versions 3.05 and later.



NOTE

Once new software is loaded perform the Pitch/Roll Offset procedure as documented in the applicable maintenance manual.

