

SERVICE BULLETIN

Beechcraft

TITLE: AUTO FLIGHT - INTRODUCE PITCH AXIS IMPROVEMENT TO GARMIN G1000 AUTOPILOT SYSTEM

1. Planning Information

NOTE

This Service Bulletin must be performed by a Raytheon Aircraft Company and Garmin Authorized Service Center.

A. Effectivity

(1) Airplanes

BEECHCRAFT Model 58 Baron, Serial TH-2078 (STC SA01614SE);

BEECHCRAFT Model G58 Baron, Serials TH-2125 through TH-2158.

If you are no longer in possession of the airplane, please forward this information to the present owner.

(2) Spares

None.

B. Reason

This Service Bulletin is being issued to introduce operational improvements to the Garmin G1000 Autopilot System pitch axis.

C. Description

This Service Bulletin installs new software using the Secure Digital (SD) Loader Card (P/N 010-00500-02) in accordance with the load procedure located in the Garmin Manual G1000 Software Loading and Post Installation Checkout, Beechcraft 58/G58, Revision A (P/N 190-00451-02) or subsequent revision. This Service Bulletin must be performed by a Raytheon Aircraft Company and Garmin Authorized Service Center.

In addition to installing the new software, Part I (Model 58 Baron, Serial TH-2078) removes and destroys the existing Secure Digital (SD) Loader Card (P/N 010-00500-01) located in the back of the

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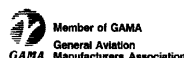
Raytheon Aircraft Company (RAC) issues Service Information for the benefit of owners and fixed base operators in the form of two classes of Service Bulletins. The first class, Mandatory Service Bulletins (red border) includes changes, inspections and modifications that could affect safety or crashworthiness. RAC also issues Service Bulletins with no red border which are designated as either recommended or optional in the compliance section within the bulletin. In the case of recommended Service Bulletins, RAC feels the changes, modifications, improvements or inspections will benefit the owner/operator and although highly recommended, Recommended Service Bulletins are not considered mandatory at the time of issuance. In the case of Optional Service Bulletins, compliance with the changes, modifications, improvements or inspections is at the owner/operator's discretion.

Both classes are mailed to:

- (a) RAC Authorized Service Centers.
- (b) Owners of record on the FAA Aircraft Registration Branch List and the RAC International Owner Notification/Registration Service List.
- (c) Those having a publications subscription.

Information on Owner Notification Service or subscription can be obtained through any RAC Authorized Service Center. As Mandatory Service Bulletins and Service Bulletins are issued, temporary notification in the Service Bulletin Master Index should be made until the index is revised. Warranty will be allowed only when specifically defined in the Service Bulletin and in accordance with the RAC Warranty Policy.

Unless otherwise designated, RAC Mandatory Service Bulletins, Service Bulletins and RAC Kits are approved for installation on RAC airplanes in original or RAC modified configurations only. RAC Mandatory Service Bulletins, Service Bulletins and Kits may not be compatible with airplanes modified by STC installations or modifications other than RAC approved kits.



ECR015650, CR28649

Issued: July, 2006

SB 22-3795

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BEECHCRAFT Baron 58 and 58A Pilot's Operating Handbook and FAA Approved Airplane Flight Manual (POH/AFM) and replaces it with a new SD Loader Card (P/N 010-00500-02). The new Software (SW) Configuration Matrix (P/N 58-590000-0075) is placed in the back of the POH/AFM (P/N 58-590000-39B2).

NOTE

For Model 58 Baron, Serial TH-2078, no changes are made to the FAA Approved Airplane Flight Manual Supplement and Pilot's Operating Handbook for Garmin G1000 Integrated Avionics System in a Raytheon Model 58 Baron (P/N 190-00451-00, Rev. A) or the BEECHCRAFT Baron 58 and 58A POH/AFM (P/N 58-590000-39B2).

In addition to installing the new software, Part II (Model G58 Baron, Serials TH-2125 through TH-2158) requires additional compliance in accordance with the FILING INSTRUCTIONS of Temporary Change No. TC1, Rev. 1 (P/N 58-590000-67TC1, Rev. 1) to the Beechcraft Model G58 Baron Pilot's Operating Handbook and FAA Approved Airplane Flight Manual (POH/AFM), P/N 58-590000-67.

Part II also removes and destroys the existing Secure Digital (SD) Loader Card (P/N 010-00500-01) and Software (SW) Configuration Matrix (P/N 58-590000-0071) which are located in the back of the POH/AFM and replaces them with SD Loader Card (P/N 010-00500-02) and SW Configuration Matrix (P/N 58-590000-0075), respectively.

D. Compliance

Raytheon Aircraft Company recommends that this Service Bulletin be accomplished at the next scheduled inspection.

E. Approval

The engineering data contained in this Service Bulletin is FAA approved.

F. Manpower

The following information is for planning purposes only:

PART I (MODEL 58 BARON, SERIAL TH-2078)

Estimated man-hours: 4 hours.

Suggested number of men: 1 man.

PART II (MODEL G58 BARON, SERIALS TH-2125 THROUGH TH-2158)

Estimated man-hours: 4 hours.

Suggested number of men: 1 man.

The above is an estimate based on experienced, properly equipped personnel complying with this Service Bulletin. Occasionally, after work has started, conditions may be found which could result in additional man-hours.

G. Weight and Balance

None.

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H. Electrical Load Data

Not changed.

I. Software Accomplishment Summary

Refer to Garmin GSA 8x Sub-System Software Accomplishment Summary, P/N 005-00264-92, Revision No. 5 or subsequent.

J. References

Raytheon Aircraft Company, BEEHCRAFT Baron 55 and 58 Shop Manual, P/N 55-590000-13E25 or subsequent revision, Section 2;

Raytheon Aircraft Company, BEEHCRAFT Baron (Model G58, TH-2125 and After) Shop Manual Supplement for Airplanes with Garmin G1000 Equipment Installed, P/N 58-590001-1 or subsequent revision, Chapter 22-14;

FAA Approved Airplane Flight Manual Supplement and Pilot's Operating Handbook for Garmin G1000 Integrated Avionics System in a Raytheon Model 58 Baron, P/N 190-00451-00, Rev. A or subsequent revision;

Raytheon Aircraft Company, BEEHCRAFT Baron 58 and 58A Special Reduced Gross Weight Configuration (Serials TH-1472 through TH-2124, except TH-1476, TH-1487, TH-1489, and TH-1498) Pilot's Operating Handbook and FAA Approved Airplane Flight Manual, P/N 58-590000-39B2 or subsequent revision;

Raytheon Aircraft Company, BEEHCRAFT Model G58 Baron (Serials TH-2125 and After) Pilot's Operating Handbook and FAA Approved Airplane Flight Manual, P/N 58-590000-67A1 or subsequent revision;

Temporary Change to the BEEHCRAFT Model G58 Baron Pilot's Operating Handbook and FAA Approved Airplane Flight Manual, P/N 58-590000-67TC1, Rev. 1;

Garmin GSA 8x Sub-System Software Accomplishment Summary, P/N 005-00264-92, Revision No. 5 or subsequent.

Garmin Manual G1000 Software Loading and Post Installation Checkout, Beechcraft 58/G58, Revision A, P/N 190-00451-02 or subsequent revision.

K. Publications Affected

Raytheon Aircraft Company, BEEHCRAFT Model G58 Baron (Serials TH-2125 and After) Pilot's Operating Handbook and FAA Approved Airplane Flight Manual, P/N 58-590000-67A1 or subsequent revision.

NOTE

For Model 58 Baron Serial TH-2078, no changes are made to the FAA Approved Airplane Flight Manual Supplement and Pilot's Operating Handbook for Garmin G1000 Integrated Avionics System in a Raytheon Model 58 Baron (P/N 190-00451-00, Rev. A) or the BEEHCRAFT Baron 58 and 58A Pilot's Operating Handbook and FAA Approved Airplane Flight Manual (P/N 58-590000-39B2).

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L. Interchangeability of Parts

Not applicable.

M. Warranty Credit

PART I (MODEL 58 BARON, SERIAL TH-2078)

Warranty credit for parts and labor to the extent noted under MATERIAL AND MANPOWER will be allowed on Serial TH-2078 through this Service Bulletin (file W3/W4 type claim).

Warranty coverage offered in this Service Bulletin for Part 1 will expire 12 months from the last day of the month this Service Bulletin is issued. After that date, the owner/operator assumes the responsibility for compliance cost. Raytheon Aircraft Company reserves the right to void warranty coverage in the area affected by this Service Bulletin until the date the Service Bulletin is accomplished by a Raytheon Aircraft Company Authorized Service Center.

All warranty work must be accomplished by a Raytheon Aircraft Authorized Service Center rated to perform maintenance on the specific model of BEEHCRAFT Airplane.

All warranty reimbursements are handled through Raytheon Aircraft Company Authorized Service Centers. The owner/operator should arrange for an Authorized Service Center to perform the work and the Authorized Service Center must submit the standard Raytheon Aircraft Company warranty claim.

PART II (MODEL G58 BARON, SERIALS TH-2125 THROUGH TH-2158)

Reference Sales Contract for each individual aircraft serial number for Post Delivery Commitment (PDC).

Warranty credit for parts and labor to the extent noted under MATERIAL AND MANPOWER will be allowed on TH-2125 through TH-2158, through Post Delivery Commitment on file at RAC (file W2/W5 type claim).

Warranty coverage offered in this Service Bulletin for Part 2 will expire 12 months from the last day of the month this Service Bulletin is issued. After that date, the owner/operator assumes the responsibility for compliance cost. Raytheon Aircraft Company reserves the right to void warranty coverage in the area affected by this Service Bulletin until the date the Service Bulletin is accomplished by a Raytheon Aircraft Company Authorized Service Center.

All warranty work must be accomplished by a Raytheon Aircraft Authorized Service Center rated to perform maintenance on the specific model of BEEHCRAFT Airplane.

All warranty reimbursements are handled through Raytheon Aircraft Company Authorized Service Centers. The owner/operator should arrange for an Authorized Service Center to perform the work and the Authorized Service Center must submit the standard Raytheon Aircraft Company warranty claim.

2. Material Information

A. Materials - Price and Availability

Contact a Raytheon Aircraft Authorized Service Center, RAPID or TMDC, as applicable, for information.

B. Industry Support

Not applicable.

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C. Airplanes

The following parts required for this modification may be ordered through a Raytheon Aircraft Authorized Service Center, RAPID * or TMDC **, as applicable:

Part Number	Description	Quantity Per Airplane
010-00500-02	Secure Digital (SD) Loader Card (Garmin G1000)	1
58-590000-0075	Software (SW) Configuration Matrix (Garmin G1000) (Obtain from TMDC **)	1
* Raytheon Aircraft Parts Inventory and Distribution Company (RAPID), 10511 E. Central, Wichita, KS 67206, Website: raytheonaircraft.com, E-mail: parts@raytheonaircraft.com, 1-888-RAPID44 (1-888-727-4344) (Domestic) or 316-676-3100 (International), FAX: 316-676-3222 (Domestic) or 316-676-3327 (International). ** Raytheon Aircraft Technical Manual Distribution Center (TMDC), P.O. Box 85, Wichita, KS 67201-0085, Website: www.racpubs.com, E-mail: tmcdc@rac.ray.com, Tel: 1-800-796-2665 or (316) 676-8238, FAX: (316) 671-2540.		

Raytheon Aircraft Company expressly reserves the right to supersede, cancel and/or declare obsolete, without prior notice, any parts or publications that may be referenced in this Service Bulletin.

D. Spares

Not applicable.

E. Reidentified Parts

None.

F. Tooling - Price and Availability

None.

3. Accomplishment Instructions

This Service Bulletin shall be accomplished as follows:

NOTE

Should any difficulty be encountered in accomplishing this Service Bulletin, contact Raytheon Aircraft Company at 1-800-429-5372 or 316-676-3140.

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A. Airplane

WARNING

Observe all Warnings and Cautions contained in the aircraft manuals referenced in this Service Bulletin.

Whenever any part of this system is dismantled, adjusted, repaired or renewed, detailed investigation must be made on completion to make sure that distortion, tools, rags or any other loose articles or foreign matter that could impede the free movement and safe operation of the system are not present, and that the systems and installations in the work area are clean.

PART I (MODEL 58 BARON, SERIAL TH-2078)

NOTE

Prior to accomplishing this Service Bulletin, verify that all avionics pass the power-on self-test.

- (1) Ensure that all electrical power has been removed from the airplane.

CAUTION

Failure to remove all electrical power from the airplane prior to card removal, could result in damage to the Terrain/Obstacle/Airport Database Card.

- (2) Remove the Terrain/Obstacle/Airport Database Card (P/N 010-00330-41) from the bottom card slot of both the PFD and the MFD and set aside.
- (3) Using the Secure Digital (SD) Loader Card (P/N 010-0500-02), install the new software. Follow the load procedure (Sections 2.4 through 2.4.8.7 "GEA 71 Engine/Airframe Unit Software" in their entirety) located in the Garmin Manual G1000 Software Loading and Post Installation Checkout, Beechcraft 58/G58, Revision A (P/N 190-00451-02) or subsequent revision.
- (4) Place the AVIONICS MASTER switch in the OFF position.
- (5) Place the R BAT switch in the OFF position.
- (6) Place the L BAT switch in the OFF position.
- (7) Wait at least 10 seconds and then place the L BAT, R BAT, and AVIONICS MASTER switches in the on position.
- (8) Pull/open the PFD and MFD circuit breakers.
- (9) While holding the ENT key on the MFD, restore power by closing the MFD circuit breaker.
- (10) When the words INITIALIZING SYSTEM appear in the upper left corner of the MFD, release the ENT key.
- (11) While holding the ENT key on the PFD, restore power by closing the PFD circuit breaker.

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- (12) When the words INITIALIZING SYSTEM appear in the upper left corner of the PFD, release the ENT key.
- (13) Press the NO softkey in response to the message DO YOU WANT TO UPDATE SYSTEM FILES?.
- (14) Using the Secure Digital (SD) Loader Card (P/N 010-0500-02), install the new software. Follow the load procedure (Sections 2.4.8.8 “GSA 81 Servo Software” through 2.4.8.9 “GSA 81 Certification Gains Software” in their entirety) located in the Garmin Manual G1000 Software Loading and Post Installation Checkout, Beechcraft 58/G58, Revision A (P/N 190-00451-02) or subsequent revision.
- (15) Repeat load of GFC1 CERT PT C in accordance with procedures in Section 2.4.8.9 listed above.
- (16) Using the Secure Digital (SD) Loader Card (P/N 010-0500-02), install the new software. Follow the load procedure (Sections 2.4.8.10 “GDL 69A Software Load” through 2.5 in their entirety) located in the Garmin Manual G1000 Software Loading and Post Installation Checkout, Beechcraft 58/G58, Revision A (P/N 190-00451-02) or subsequent revision.
- (17) After loading the software, on the PFD SYSTEM STATUS page, use the Software Configuration Matrix (P/N 58-590000-0075) to verify the software loaded by the item in “System Status Page Name” column with items in “Software” “P/N” and “VER.” columns.

NOTE

If at any time the summary does not show a successful load, steps 3 through 17 must be repeated in their entirety.

- (18) Place the AVIONICS MASTER switch in the OFF position.
- (19) Place the R BAT switch in the OFF position.
- (20) Place the L BAT switch in the OFF position.
- (21) Remove the SD card from the top card slot on the PFD.
- (22) Install the Terrain/Obstacle/Airport Database Cards (P/N 010-00330-41), that were previously removed and set aside in step 2, into the bottom card slot of the PFD and into the bottom card slot of the MFD.
- (23) Place the L BAT switch in the on position.
- (24) Place the R BAT switch in the on position.
- (25) Place the AVIONICS MASTER switch in the on position.
- (26) Verify red AFCS on PFD cycles to white PFT (Pre-Flight Test), then clears and autopilot tone is heard.
- (27) Select the SYSTEM STATUS page of the AUX group on the MFD and verify operational status (green check marks) of units in the LRU column.
- (28) Verify there are no errors on the PFD ALERTS window.
- (29) Place the AVIONICS MASTER switch in the OFF position.
- (30) Place the R BAT switch in the OFF position.
- (31) Place the L BAT switch in the OFF position.

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- (32) Disconnect the 28 volt auxiliary power unit from airplane (refer to Section 2 of the BEECHCRAFT Baron 55 and 58 Shop Manual).
- (33) Ensure all work areas are clean and clear of tools and miscellaneous items of equipment.

NOTE

For Model 58 Baron Serial TH-2078, no changes are made to the FAA Approved Airplane Flight Manual Supplement and Pilot's Operating Handbook for Garmin G1000 Integrated Avionics System in a Raytheon Model 58 Baron (P/N 190-00451-00, Rev. A) or the BEECHCRAFT Baron 58 and 58A Pilot's Operating Handbook and FAA Approved Airplane Flight Manual (P/N 58-590000-39B2).

- (34) Remove and destroy the existing Secure Digital (SD) Loader Card (P/N 010-00500-01) located in the back of the BEECHCRAFT Baron 58 and 58A Pilot's Operating Handbook and FAA Approved Airplane Flight Manual.
- (35) Place the new SD Loader Card (P/N 010-00500-02) and the new Software (SW) Configuration Matrix (P/N 58-590000-0075) in the back of BEECHCRAFT Baron 58 and 58A Pilot's Operating Handbook and FAA Approved Airplane Flight Manual.
- (36) Return airplane to service.

PART II (MODEL G58 BARON, SERIALS TH-2125 THROUGH TH-2158)

NOTE

Prior to accomplishing this Service Bulletin, verify that all avionics pass the power-on self-test.

- (1) Ensure that all electrical power has been removed from the airplane.

CAUTION

Failure to remove all electrical power from the airplane prior to card removal, could result in damage to the Terrain/Obstacle/Airport Database Card.

- (2) Remove the Terrain/Obstacle/Airport Database Card (P/N 010-00330-41) from the bottom card slot of both the PFD and the MFD and set aside.
- (3) Using the Secure Digital (SD) Loader Card (P/N 010-0500-02), install the new software. Follow the load procedure (Sections 2.4 through 2.4.8.7 "GEA 71 Engine/Airframe Unit Software" in their entirety) located in the Garmin Manual G1000 Software Loading and Post Installation Checkout, Beechcraft 58/G58, Revision A (P/N 190-00451-02) or subsequent revision.
- (4) Place the AVIONICS MASTER switch in the OFF position.
- (5) Place the R BAT switch in the OFF position.
- (6) Place the L BAT switch in the OFF position.
- (7) Wait at least 10 seconds and then place the L BAT, R BAT, and AVIONICS MASTER switches in the on position.

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- (8) Pull/open the PFD and MFD circuit breakers.
- (9) While holding the ENT key on the MFD, restore power by closing the MFD circuit breaker.
- (10) When the words INITIALIZING SYSTEM appear in the upper left corner of the MFD, release the ENT key.
- (11) While holding the ENT key on the PFD, restore power by closing the PFD circuit breaker.
- (12) When the words INITIALIZING SYSTEM appear in the upper left corner of the PFD, release the ENT key.
- (13) Press the NO softkey in response to the message DO YOU WANT TO UPDATE SYSTEM FILES?.
- (14) Using the Secure Digital (SD) Loader Card (P/N 010-0500-02), install the new software. Follow the load procedure (Sections 2.4.8.8 "*GSA 81 Servo Software*" through 2.4.8.9 "*GSA 81 Certification Gains Software*" in their entirety) located in the Garmin Manual G1000 Software Loading and Post Installation Checkout, Beechcraft 58/G58, Revision A (P/N 190-00451-02) or subsequent revision.
- (15) Repeat load of GFC1 CERT PT C in accordance with procedures in Section 2.4.8.9 listed above.
- (16) Using the Secure Digital (SD) Loader Card (P/N 010-0500-02), install the new software. Follow the load procedure (Sections 2.4.8.10 "*GDL 69A Software Load*" through 2.5 in their entirety) located in the Garmin Manual G1000 Software Loading and Post Installation Checkout, Beechcraft 58/G58, Revision A (P/N 190-00451-02) or subsequent revision.
- (17) After loading the software, on the PFD SYSTEM STATUS page, use the Software Configuration Matrix (P/N 58-590000-0075) to verify the software loaded by the item in "System Status Page Name" column with items in "Software" "P/N" and "VER." columns.

NOTE

If at any time the summary does not show a successful load, steps 3 through 17 must be repeated in their entirety.

- (18) Place the AVIONICS MASTER switch in the OFF position.
- (19) Place the R BAT switch in the OFF position.
- (20) Place the L BAT switch in the OFF position.
- (21) Remove the SD card from the top card slot on the PFD.
- (22) Install the Terrain/Obstacle/Airport Database Cards (P/N 010-00330-41), that were previously removed and set aside in step 2, into the bottom card slot of the PFD and into the bottom card slot of the MFD.
- (23) Place the L BAT switch in the on position.
- (24) Place the R BAT switch in the on position.
- (25) Place the AVIONICS MASTER switch in the on position.
- (26) Verify red AFCS on PFD cycles to white PFT (Pre-Flight Test), then clears and autopilot tone is heard.
- (27) Select the SYSTEM STATUS page of the AUX group on the MFD and verify operational status (green check marks) of units in the LRU column.

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- (28) Verify there are no errors on the PFD ALERTS window.
- (29) Place the AVIONICS MASTER switch in the OFF position.
- (30) Place the R BAT switch in the OFF position.
- (31) Place the L BAT switch in the OFF position.
- (32) Disconnect the 28 volt auxiliary power unit from airplane (refer to Section 2 of the BEEHCRAFT Baron 55 and 58 Shop Manual).
- (33) Ensure all work areas are clean and clear of tools and miscellaneous items of equipment.
- (34) Ensure the pages for the Temporary Change No. TC1, Rev. 1 (P/N 58-590000-67TC1, Rev. 1) are inserted into the BEEHCRAFT Model G58 Baron Pilot's Operating Handbook and FAA Approved Airplane Flight Manual (P/N 58-590000-67). Follow the FILING INSTRUCTIONS of Temporary Change No. TC1, Rev. 1.

NOTE

Temporary Change No. TC1, Rev. 1 is provided to applicable owner/operators of record and manual subscribers to the Raytheon Aircraft Technical Publication Subscription Service. An additional copy of the Temporary Change may be obtained from Raytheon Aircraft Technical Manual Distribution Center (TMDC), P.O. Box 85, Wichita, KS 67201-0085, Website: www.racpubs.com, E-mail: tmdc@rac.ray.com, Tel: 1-800-796-2665 or (316) 676-8238, FAX: (316) 671-2540.

- (35) Remove and destroy the existing Secure Digital (SD) Loader Card (P/N 010-00500-01) located in the back of the BEEHCRAFT Model G58 Baron Pilot's Operating Handbook and FAA Approved Airplane Flight Manual. Replace it with SD Loader Card (P/N 010-00500-02).
- (36) Remove and destroy the Software (SW) Configuration Matrix (P/N 58-590000-0071) located in the back of the BEEHCRAFT Model G58 Baron Pilot's Operating Handbook and FAA Approved Airplane Flight Manual. Replace it with SW Configuration Matrix (P/N 58-590000-0075).
- (37) Return airplane to service.

B. Spares

Not applicable.

C. Record of Compliance

Upon completion of this Service Bulletin, make an appropriate maintenance record entry.