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DAI SI 42NG-007
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4-Nov-2009
FT

SERVICE INFORMATION NO. SI-42NG-007

> **NOTE:** SI's are used only:
> 1) To distribute information from DAI to our customers.
> 2) To distribute applicable information/documents from our suppliers to our customers with additional information.
> Typically there is no revision service for SI's. Each new information or change of that will be sent along with a new SI.

I. TECHNICAL DETAILS

1.1 Airplanes affected:

All DA 42 NG and DA 42 M-NG aircraft with G1000 system software versions prior to 0670.03 are affected.

1.2 Subject:

GARMIN Software Service Bulletin No. 0945, Revision A
ATA-Code: 34-00

1.3 Reason:

The Software Service Bulletin No. 0945, Revision A provides instructions for the GARMIN G1000 System Software upgrade to Version v0670.03.

1.4 Information:

For detailed technical information refer to the GARMIN Software Service Bulletin No. 0945, Revision A which is applicable without any further additions or restrictions.

II. OTHERS

The GARMIN Software Service Bulletin No. 0945, Revision A is attached to this SI.

In case of doubt contact Diamond Aircraft Industries GmbH.

SOFTWARE SERVICE BULLETIN

NO.: 0945, Revision A

TO: Diamond Aircraft, Inc.

DATE: 2 November 2009

SUBJECT: G1000 System Software Version 0670.03 Update for G1000-equipped
Diamond DA42NG Aircraft

PURPOSE

This service bulletin announces the availability of G1000 System Software Version
0670.03 for Diamond DA42NG aircraft.

DESCRIPTION

Upgrading G1000 System Software to 0670.03 provides software enhancements
including:

- Corrects right fuel pressure (R FUEL PRES) indication for System Software
  0670.02
- Sets correct default values for Vr and Vy
- Prerequisite for installation of Synthetic Vision/Pathways

<u>**APPROVAL**</u>

The engineering data contained in this software service bulletin are FAA approved. This bulletin does not provide installation authorization.

For approved configurations refer to the Diamond Aircraft MSB 42NG-003, latest version.

<u>**AFMS AND PILOT'S GUIDE CONSIDERATIONS**</u>

Flight Manual documentation as required per Diamond Aircraft.

The following documents describe operation of the Garmin G1000:

Garmin Part Number	Document Title
190-00963-00	G1000 Cockpit Reference Guide for the Diamond DA42NG
190-00962-00	G1000 Pilot's Guide for the Diamond DA42NG

<u>**PRODUCT AFFECTED**</u>

All G1000 equipped Diamond DA42NG aircraft with G1000 system software versions prior to 0670.03 are affected.

<u>**COMPLIANCE**</u>

This service bulletin is mandatory for all Diamond DA42NG installed Garmin G1000 systems with System Software Version 0670.02. This service bulletin is optional for all other Diamond DA42NG installed Garmin G1000 systems.

<u>**REFERENCES**</u>

Garmin Part Number	Document Title
190-00907-00 Revision C or later	Garmin G1000 System Maintenance Manual
190-00963-00 Revision B or later	Garmin G1000 Cockpit Reference Guide for the DA42NG

The above referenced documents are available from www.garmin.com, within the Dealer section of the website.

MANPOWER

This Software Service Bulletin requires a maximum of two and a half (2.5) hours labor including testing and return-to-service.

WARRANTY INFORMATION

This modification is **only** warranty reimbursable for Diamond DA42NG aircraft with system software version **0670.02**. When completing the Garmin warranty claim be sure to include the following information to ensure proper reimbursement:
- aircraft serial number
- aircraft registration number
- system software version (prior to installation of system software version 0670.03)
- clearly indicate that this Service Bulletin has been complied with

MODIFICATION INSTRUCTIONS

1. INTRODUCTION

1.1. Scope

These instructions present field upgrade procedures for G1000-equipped Diamond Model DA42NG aircraft. These instructions must be followed step-by-step in order and completely, to upgrade an existing approved configuration of the system software to a newer approved configuration.

It is assumed that the person performing the upgrade is familiar with the aircraft and has a working knowledge of typical avionics systems.

> **NOTE**
>
> Instructions contained in this document are written specifically for upgrades to existing G1000 installations in Diamond Model DA42NG aircraft.

❑ To identify what G1000 System Software version is installed, do the steps that follow:

1. In the aircraft, turn the aircraft ELECT. MASTER switch on.

2. Look at the MFD power-up screen (see following figure). In the upper right corner, the display shows 'Diamond DA42NG System XXXX.XX'.

3. This 'System' number is the System Software Version. It correlates to the G1000 SW Loader Card used to load the software to the system. For example:

EXAMPLE:

System Software Version '**0670.03**' = Loader Card P/N 010-0**0670-03**

If the System Software Version is already at 0670.03, this Software Service Bulletin may have already been performed, proceed to the Testing Procedure section of this bulletin.

1.2. Required Materials and Equipment:

NOTE

Make sure that all of the required materials and equipment are on hand before you begin the upgrade procedure.

CAUTION

While performing this procedure ensure the aircraft is connected to and drawing power from a power cart. A loss of power during this procedure may result in a defective GIA.

❑ A ground power unit capable of supplying 28 VDC power to the aircraft systems and avionics

❑ Valid GPS Satellite signal sufficient to obtain a 3-dimensional GPS position (fix)

❑ G1000, DA42NG Software Loader Card, P/N 010-00670-03

2. G1000 Software Upgrade Procedure

All G1000 screen shots used in this document are intended to provide visual reference only. All information depicted in screen shots, including software file names, versions and part numbers, is subject to change and may not be up to date. Please refer to the table in Section 3 of this document to verify the software part number and version for each LRU.

2.1. MFD and PFD Software Load

1. Remove all database cards from the MFD and PFD.

2. Turn on the ground power unit, if used.

3. Turn on the Electric Master Switch.

4. Turn on the AVIONICS MASTER switch. At this moment, all G1000 equipment is receiving power.

5. Disengage the MFD and PFD circuit breakers.

6. Insert the correct G1000 Loader Card into the MFD top card slot (located on the MFD).

7. While holding the ENT key on the MFD, engage the MFD circuit breaker.

8. When the words `INITIALIZING SYSTEM` appear in the upper left corner of the MFD, release the ENT key.

9. Press the ENT key to acknowledge the following prompt (NOTE: A softkey labeled 'YES' appears in the lower right corner and may be used instead of the ENT key):

```
DO YOU WANT TO UPDATE SYSTEM FILES?
PRESS CLR FOR NO AND ENT FOR YES
YOU HAVE 30 SECONDS BEFORE NO IS RETURNED
```

10. The following screen is displayed.

```
DO YOU WANT TO UPDATE SYSTEM FILES?
PRESS CLR FOR NO AND ENT FOR YES
YOU HAVE 30 SECONDS BEFORE NO IS RETURNED
UPDATING SYSTEM FILES.  DO NOT TURN OFF POWER ! ! !
THIS MAY TAKE UP TO 10 MINUTES
```

11. If a message appears about verifying the database basemap, press any key to continue.

12. New software is loaded to the MFD. When complete, the MFD starts in configuration mode.

13. Remove the G1000 Loader Card from the MFD and insert it into the top card slot on the PFD.

14. While holding the ENT key on the PFD, engage the PFD circuit breaker.

15. When the words `INITIALIZING SYSTEM` appear in the upper left corner of the PFD, release the ENT key.

16. Press the ENT key to acknowledge the following prompt (NOTE: A softkey labeled 'YES' appears in the lower right corner and may be used in lieu of the ENT key):

```
DO YOU WANT TO UPDATE SYSTEM FILES?
PRESS CLR FOR NO AND ENT FOR YES
YOU HAVE 30 SECONDS BEFORE NO IS RETURNED
```

17. If a message appears about verifying the database basemap, press any key to continue.

18. The following screen is displayed.

```
DO YOU WANT TO UPDATE SYSTEM FILES?
PRESS CLR FOR NO AND ENT FOR YES
YOU HAVE 30 SECONDS BEFORE NO IS RETURNED
UPDATING SYSTEM FILES.  DO NOT TURN OFF POWER ! ! !
THIS MAY TAKE UP TO 10 MINUTES
```

19. New software is loaded to the PFD.

20. While in configuration mode write down the following configuration settings:

Transponder Configuration (GTX Configuration page)

VFR Code: _____

Address Type:_____

Flight ID Type:_____

Audio Panel Configuration (GMA Configuration page)

Marker Beacon HI SENSE THRESHOLD:_____

Marker Beacon LO SENSE THRESHOLD:_____

Disable DME:_____

Disable ADF:_____

21. When PFD update is complete, it starts in the configuration mode. Do not remove power, proceed to Section 2.2.

NOTE

For the rest of the software/configuration procedure, do not operate the MFD while loading software or configuration files unless specifically instructed to do so. A failed or cancelled load may result.

2.2. Initial G1000 Software and Configuration Upload

1. Using the PFD, go to the SYSTEM UPLOAD page using the FMS knob.

2. Activate the cursor and highlight the AIRFRAME field.

3. Using the FMS knob select DA42NG.

4. Press the ENT key.

5. Using the FMS knob select Diamond DA42NG WAAS or Diamond DA42NG in the FILE field, depending on your current system.

CAUTION

Loading non-WAAS software in a WAAS-equipped G1000 system, or loading WAAS software in a non-WAAS-equipped G1000 system, may result in a damaged GIA.

```
                              SYSTEM UPLOAD
   ┌AIRFRAME┐
   DA42NG


   ┌FILE┐
   Diamond DA42NG WAAS

        ┌─────────────────────────┐
        │ Diamond DA42NG WAAS     │
        │ Diamond DA42NG          │
        └─────────────────────────┘
                            LRU VERS   CARD VERS   CARD PART NUM    SOFTWARE   CONFIGURATION








   ┌SUMMARY┐




```

6. Once the correct file has been selected, press the ENT key.

7. Press the LOAD softkey to begin the software and configuration loading process.

```
                              SYSTEM UPLOAD
   ┌AIRFRAME┐
   DA42NG


   ┌FILE┐
   Diamond DA42NG WAAS


   ┌PRODUCT┐
                       LRU VERS   CARD VERS   CARD PART NUM    SOFTWARE   CONFIGURATION

   AIRFRAME                                                    N/A        ☑
   AIRFRAME ALERTS                                             N/A        ☑
   SYSTEM                                                      N/A        ☑
   MANIFEST                                                    N/A        ☑
   MFD_1                                                       N/A        ☑
   PFD_1                                                       N/A        ☑
   GIA_1               5.65       5.65        006-B0544-2B     ☑          ☑
   GIA_2               5.65       5.65        006-B0544-2B     ☑          ☑
   WAAS 1              3.1        3.1         006-B0339-09     ☑          N/A
   WAAS 2              3.1        3.1         006-B0339-09     ☑          N/A


   ┌SUMMARY┐




 CHK ALL │ CHK SW │ CHK CFG │ CLR ALL │      LOAD    │       │ SMRY UP │ SMRY DN │   UPDT CFG
```

8. Monitor the status of the upload process.
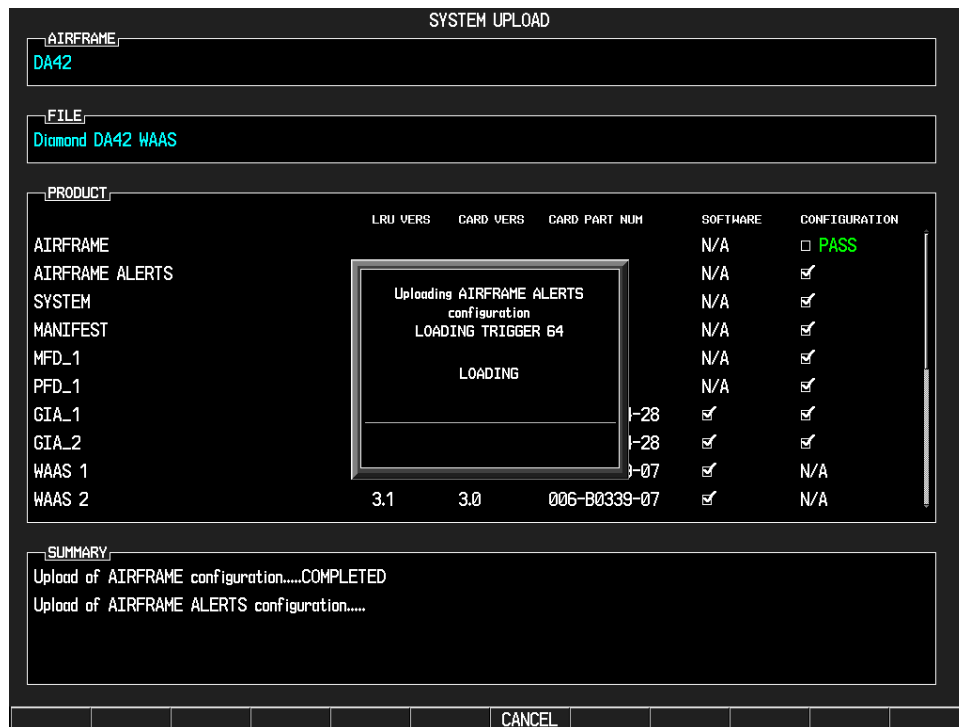
9. Once all files have been successfully loaded, press the ENT key to acknowledge the Upload Complete prompt.

2.3. Optional Equipment

If the Diamond DA42NG is equipped with any of the following optional equipment, perform the procedure below to load software and configuration files. If the DA42NG is not equipped with any of the following options, proceed to Section 3 of this bulletin. For approved configurations refer to the Diamond Aircraft MSB 42NG-003, latest revision.


- DA42NG Option – Weather Radar (NO GDL69)
- DA42NG Option – Weather Radar
- DA42NG Option – Stormscope
- DA42NG Option – TAS600 Series Installation
- DA42NG Option – GFC 700
- DA42NG Option – GDL69
- DA42NG Option – DME
- DA42NG Option – Deicing
- DA42NG Option – Aux Fuel Tanks
- DA42NG Option – ADF

2.3.1. Loading Optional Equipmement Software and Configuration Files

1. If not already there, go to the SYSTEM UPLOAD page using the FMS knob.

2. Activate the cursor and highlight the AIRFRAME field.

3. Using the FMS knob select DA42NG Options.

4. Press the ENT key.

5. Using the FMS knob select the appropriate option and press the ENT key.
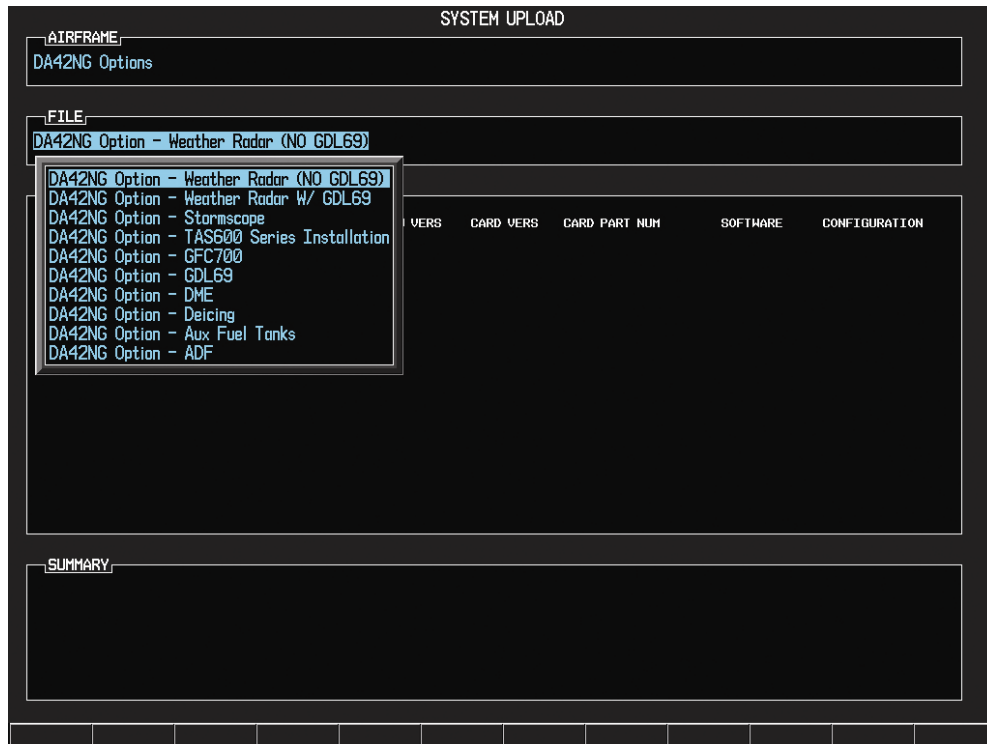
6. Press the LOAD softkey, to begin the software and configuration loading process.

7. Press the ENT key to acknowledge the Upload Complete prompt.

8. View the SUMMARY field and ensure that all items are "COMPLETED".

9. Repeat steps 5 through 8 to load any other equipped options.

10. Re-enter the configuration settings as noted in Section 2.1 Step 20 of this bulletin.

11. Refer to the DA 42 NG Airplane Maintenance Manual Section 31-40-00 for instructions on manually setting other configuration settings.

12. Proceed to Section 3 of this bulletin.

3. TESTING PROCEDURE

3.1. Software Load Confirmation

1. Using the PFD, go to the System Status page using the small FMS knob. Activate the cursor and toggle to the LRU window.

2. In the LRU window, highlight each of the items listed in the following table and verify that the software part number and version displayed on the System Status page matches those listed in the table.

DA42NG G1000 System Software Version 0670.03 (WAAS-Equipped)

LRU	SOFTWARE PART NUMBER	SOFTWARE VERSION
GDC1	006-B0261-12	3.02
GDC1 FPGA	006-C0055-00	1.05
GEA1	006-B0193-05	2.07
GFC CERT (GIA1, GIA2, P C, P M, PT C, PT M, R C, R M, Y C, Y M)	006-D0744-03	2.00
GIA1	006-B0544-2B	5.65
GIA1 AUDIO	006-D0425-05	2.05
GIA2	006-B0544-2B	5.65
GIA2 AUDIO	006-D0425-05	2.05
GMA1	006-B0203-41	4.01
GMU1	006-B0224-00	2.01
GMU1 FPGA	006-C0048-00	2.00
GPS1	006-B0339-09	3.1
GPS2	006-B0339-09	3.1
GRS1	006-B0223-09	2.11
GRS1 FPGA	006-C0049-00	02.00
GSA (PITCH CTL, PITCH MON, PITCH TRM C, PITCH TRIM M, ROLL CTL, ROLL MON, YAW CTL, YAW MON)	006-B0398-30	2.20
GTX1	006-B0172-XX	5.01
MFD1	006-B0319-75	9.05
MFD1 FPGA	006-C0036-04	1.04
PFD1	006-B0319-75	9.05
PFD1 FPGA	006-C0036-04	1.04

DA42NG G1000 System Software Version 0670.03 (Non-WAAS)

LRU	SOFTWARE PART NUMBER	SOFTWARE VERSION
GDC1	006-B0261-12	3.02
GDC1 FPGA	006-C0055-00	1.05
GEA1	006-B0193-05	2.07
GFC CERT (GIA1, GIA2, P C, P M, PT C, PT M, R C, R M, Y C, Y M)	006-D0744-03	2.00
GIA1	006-B0190-48	5.65
GIA1 AUDIO	006-D0425-05	2.05
GIA2	006-B0190-48	5.65
GIA2 AUDIO	006-D0425-05	2.05
GMA1	006-B0203-41	4.01
GMU1	006-B0224-00	2.01
GMU1 FPGA	006-C0048-00	2.00
GPS1	006-B0093-XX	3.03
GPS2	006-B0093-XX	3.03
GRS1	006-B0223-09	2.11
GRS1 FPGA	006-C0049-00	02.00
GSA (PITCH CTL, PITCH MON, PITCH TRM C, PITCH TRIM M, ROLL CTL, ROLL MON, YAW CTL, YAW MON)	006-B0398-30	2.20
GTX1	006-B0172-XX	5.01
MFD1	006-B0319-75	9.05
MFD1 FPGA	006-C0036-04	1.04
PFD1	006-B0319-75	9.05
PFD1 FPGA	006-C0036-04	1.04

NOTE

All G1000 system software versions correspond to their respective G1000 Loader Card part numbers (e.g. G1000 Software Loader Card part number 010-00670-03 contains G1000 system software version 0670.03). This number is shown on the G1000 on the start-up page of the MFD, in the upper right corner of the display.

3. De-activate the cursor.

<div align="center">

<table><tr><td>NOTE</td></tr></table>

</div>

If any software version and/or part number does not match those specified by the table in the Additional Information section of this document, or if the software is not successfully loaded, DO NOT continue with post-installation procedures. Troubleshoot and resolve the issue (refer to the G1000 System Maintenance Manual P/N 190-00907-00) before continuing.

4. Turn off system power.

3.2. Software Operational Test

1. Remove the G1000 Loader Card from the PFD and set it aside.

2. Reinsert all database cards.

3. Turn system on in normal mode.

4. If messages appear about verifying databases, press any key to continue.

5. Look at the MFD power-up screen. In the upper right corner, the display shows 'Diamond DA42NG System 0670.03':
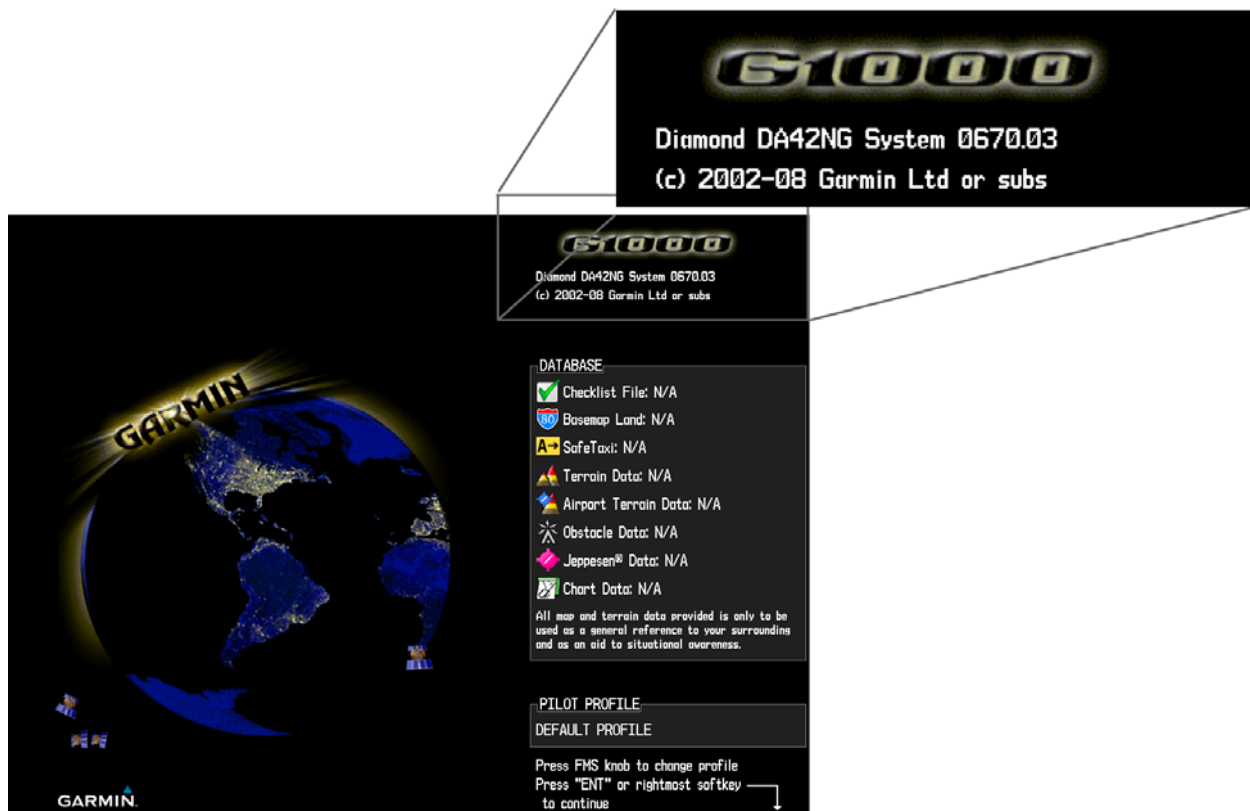
6. This 'System' number is the System Software Version. It correlates to the G1000 SW Loader Card used to load the software to the system:

EXAMPLE:

System Software Version '**0670.03**' = Loader Card P/N 010-0**0670-03**

7. Verify that the System Software Version is correct.

8. Press the ENT key to acknowledge the agreement on the MFD (the rightmost softkey may also be used to acknowledge the agreement).

NOTE

In the normal operating mode, data fields that are invalid have large red X's through them. A valid field does not display a red X.

9. Allow the displays to initialize for approximately one minute. The GDC 74A and GRS 77/GMU 44 require a longer initialization period than do other LRUs. During normal operation, this causes the attitude, heading, airspeed, altitude, vertical speed, and OAT fields to be invalid during the first 40-60 seconds of PFD power-up.

10. Verify that no 'Manifest' errors appear when the ALERTS softkey is pressed.

11. Check that all COM/NAV fields are valid in the top corners of the PFD and MFD.

12. Check that attitude, heading, altitude, airspeed, vertical speed, TAS, and OAT fields are valid on the PFD.

13. Verify that there are no BACKUP PATH alerts on the PFD. If an LRU is not communicating over its primary path, the BACKUP PATH alert will identify which LRU is having the problem. Correct the problem before proceeding; refer to the G1000 System Maintenance Manual (190-00907-00) as needed.

14. Verify that engine and airframe instruments are valid on the MFD.

15. Push the red DISPLAY BACKUP button on the GMA 1347. Verify both displays enter reversion mode: both should have valid attitude, altitude, airspeed, vertical speed, and engine instruments.

16. De-activate reversion mode by pushing the DISPLAY BACKUP button again.

17. The GIA 63 units should normally acquire a 3D GPS navigation solution within 5 to 10 minutes of startup, provided the aircraft is outside (or indoors with a GPS repeater). Select the AUX – GPS STATUS Page on the MFD. Two softkeys on the bottom of the display allow the user to toggle between GPS 1 and GPS 2. Verify that both receivers show 3D Navigation on the MFD.

3.3. ADF Checkout (if applicable)

This check verifies that the ADF-to-G1000 interface operates correctly. This check is required for DA42NG aircraft with the remote-mount Becker RA3502 ADF installed.

1. On the PFD, check to see if the ADF window(s) is displayed. If not, press the PFD softkey. Using either the BRG1 or BRG2 softkeys, toggle the softkey until the ADF bearing is shown. Press the BACK softkey.

2. Verify that the ADF window is not invalid (no red 'X').

3. Press the ADF/DME softkey and check to ensure the ADF tuning window displays correctly.

3.4. DME Checkout (if applicable)

This check verifies that the DME-to-G1000 interface operates correctly. This check is required for DA42NG aircraft with the Honeywell remote mounted KN63 DME installed.

1. On the PFD, check to see if the DME window is displayed. If not, press the PFD softkey, then press the DME softkey to display the DME window next to the HSI.

2. Verify that the DME window is not invalid (no red 'X').

3. On the PFD, press the ADF/DME softkey. Verify that the ADF/DME TUNING screen is displayed correctly.

3.5. GDL Configuration Verification (if applicable)

This check verifies that the GDL69-to-G1000 interface operates correctly. This check is required for DA42NG aircraft with the GDL 69 installed.

1. Using the small FMS knob, verify the Map – Weather Data Link page can be displayed on the MFD.


> **NOTE**
>
> If needed, refer to the document GDL 69/69A XM Satellite Radio Activation Instructions (190-00355-04).

3.6. Stormscope Configuration Verification (if applicable)

This check verifies that the L-3 Communications Stormscope® interface operates correctly. This check is required for DA42NG aircraft with the Stormscope installed.

1. Using the small FMS knob, verify the Map – Stormscope page can be displayed on the MFD.
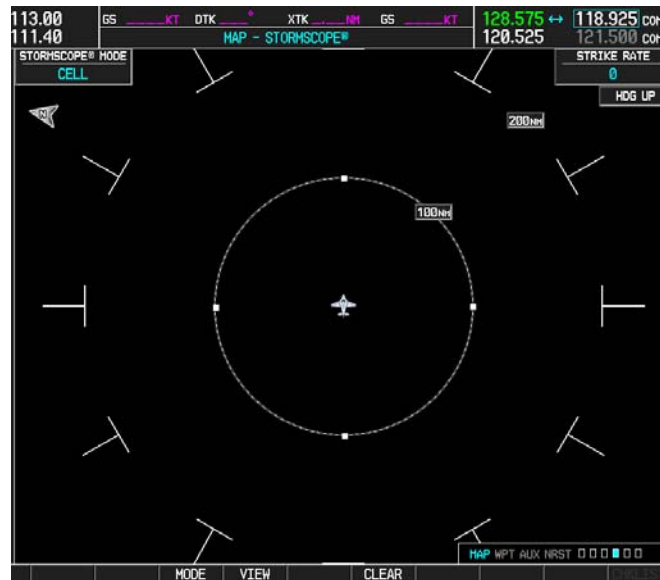
3.7. TAS System Verification (KTA870 TAS or TAS600) if applicable

This check verifies that the KTA870 TAS-to-G1000 or TAS600-to-G1000 interface operates correctly. This check is required for DA42NG aircraft with the KTA870 TAS or TAS600 installed.

1. Using the small FMS knob, verify that the upper left corner of the Map – Traffic Map page on the MFD displays "TAS OPERATING".

3.8. GFC Autopilot Ground Checks (if applicable)

The following procedure will verify the proper operation of the GFC 700 AFCS. The technician performing these checks must be thoroughly familiar with the GFC 700 by studying the G1000 Cockpit Reference Guide for the DA42NG.

3.8.1. Autopilot Pre-Flight Test

NOTE

The autopilot pre-flight test will run on every full airplane power-on.

1. Open the AUTOPILOT circuit breaker and reset. The AFCS will re-initiate the pre-flight test.

NOTE

A red 'AFCS' (AFCS) annunciation will be displayed until both GIAs, the AHRS, and the autopilot servos are online. The red 'AFCS' annunciation will then be replaced by a white 'PFT' annunciation.

2. Verify that a white 'PFT' annunciation is displayed on the PFD, as shown in the following figure.

3. Upon successful completion of the pre-flight test, an aural alert will sound and the 'PFT' annunciation will clear. Continue to Step 3.8.2.

NOTE

If the 'PFT' annunciation turns red, the test has failed and additional troubleshooting will have to be performed prior to continuing with the test.

---

4. If the aural alert is not heard, but pre-flight testing passed, engage the Autopilot by pressing the AP key on the MFD and disengage the Autopilot by pressing the AP key again. Visual and aural disconnect alerting should occur. If no alert is heard, the audio interface between GIA No. 1 and the audio panel should be checked. If an alert is heard, the audio interface between GIA No. 2 and the audio panel should be checked.

3.8.2. AFCS Switch Checks

To verify that the AFCS system buttons and switches are operating correctly, perform the following checks:

1. Actuate the manual electric trim (MET) hat switch forward/aft on the pilot's control stick. The pitch trim should engage and the run in the selected direction. Check operation in both directions.

2. While actuating the MET switch in the pitch axis, press the A/P DISC button on the pilot's control stick and hold. The pitch trim should stop running and the pitch trim indication should stop moving. The pitch trim will not run for as long as the A/P DISC button is pressed.

3. Release the pilot's A/P DISC button. The trim should resume running. Release the MET switch.

4. While actuating the MET switch in the pitch axis, press the A/P DISC button on the copilot's control stick and hold. The pitch trim should stop running and the pitch trim indication should stop moving. The pitch trim will not run for as long as the A/P DISC button is pressed.

5. Release the copilot's A/P DISC button. The trim should resume running. Release the MET switch.

6. Engage the Autopilot by pressing the AP key on the MFD. The pitch and roll clutches should engage, resisting movement of the control stick.

7. Press and hold the CWS switch on the pilot's control stick. CWS should be annunciated on the PFD and the control stick should now move freely when moved manually.

8. Release the CWS switch. CWS should be removed from the PFD and the autopilot should hold the control stick in its present attitude.

9. Press the A/P DISC switch. The Autopilot should command a normal disengagement. A single disconnect tone will be heard and a flashing amber "AP" will be visible on the PFD for approximately five seconds.

10. Verify that the control stick is free in pitch and roll axes.

11. Engage the Autopilot.

12. Pull the AUTOPILOT circuit breaker. The Autopilot should command an abnormal disconnect, consisting of a continuous disconnect tone and flashing red 'AP'. No AFCS annunciations (e.g. AFCS, PFT, Mistrim) should remain on the PFD.

13. Press the AP key on the MFD to silence the autopilot abnormal disconnect tone and then reset the AUTOPILOT breaker.

14. Wait for the pre-flight test sequence to successfully complete again.

15. Press the Go Around button on the LH power lever. 'GA' should be annunciated on the PFD for both pitch and roll modes and the command bars should indicate a wings-level climb to 6 degrees.

16. Press the FD key on the MFD twice to deactivate the Go Around mode and reset the Flight Director. Green 'PIT' and 'ROL' annunciations will be visible on the PFD.

17. Center the pitch trim.

18. Engage the Autopilot.

19. Press the CWS button and verify there is no residual force on the control stick for the pitch axis.

20. Disengage the Autopilot by pressing the A/P DISC switch.

3.8.3. Autopilot Operation Checks

1. Push the HDG knob in to synchronize the heading bug to the present aircraft heading on the HSI.

2. Engage the Autopilot.

3. Select Heading mode by pressing the HDG key on the MFD. The command bars should be level and the control stick should be stationary (very slow movement acceptable, due to the aircraft not being perfectly level).

4. Turn the HDG knob to the left and verify that the command bars move to the left and the control stick moves to the left.

5. Turn the HDG knob to the right and verify that the command bars move to the right and the control stick moves to the right.

6. Push the HDG knob in to synchronize the heading bug to the present aircraft heading on the HSI

7. Push the CWS button and pull the control stick to the middle of the pitch control range.

8. Release the CWS button. Verify that the Autopilot clutches re-engage and hold the control stick stationary.

9. Holding the control stick lightly, press the NOSE UP key on the MFD twice, to increase the pitch reference. Verify that the command bars move up approximately one degree and the control stick begins moving aft.

10. Hold the control stick and press the CWS button, re-synchronizing the pitch reference and re-centering the control stick.

11. Release the CWS button and verify that servo clutches re-engage before releasing the control stick.

12. Press the NOSE DN key on the MFD twice. Verify that the command bars command down and the control stick begins moving forward.

13. Hold the controls and press CWS to re-center the command bars and stop control stick movement.

14. With the Autopilot still engaged and the CWS button pressed, move the control stick to its aft limit.

15. Release the CWS button and apply continuous forward pressure, slowly moving the control stick. After 1 or 2 seconds, the trim should begin moving in a trim up direction.

16. Grip the control stick and press the CWS button. Trim motion should stop.

17. Move the control stick to the forward limit and release the CWS button.

18. Slowly pull back on the control stick. After a similar delay, the trim should begin to trim down.

19. Relieve pressure on the control stick and the trim motion should stop.

20. Hold the control stick and press the A/P DISC switch to disconnect the Autopilot.

21. Engage VS mode by pressing the VS key on the MFD. Verify the PFD displays 'VS' in green and indicates a pitch reference of '0 FPM'.

NOTE

An altitude must be selected prior to pressing the FLC key.

22. Press the FLC key on the MFD and verify that 'FLC' is annunciated on the PFD in green with a reference of 90 KTS (NOTE: This is the minimum speed reference for this airplane).

23. Press the ALT key on the MFD and verify that the 'ALT' annunciation is displayed in green on the PFD with an altitude reference equal to the aircraft altitude.

24. Press the FD key and verify that the mode annunciations and command bars are removed from the display.

3.9. Deicing System Verification (if applicable)

This check verifies that the Deicing system interfaces operate correctly. This check is required for DA42NG aircraft with the Deicing option installed.

1. For aircraft with the Deicing system installed, verify that the lower left corner of the System Display on the PFD displays "DEICE FLUID".

3.10. Final Checks

Before returning the aircraft to service:

- Make appropriate entry in the aircraft's maintenance records, noting that the instructions in this Software Service Bulletin have been performed
- Record the G1000, DA42NG Loader Card part number in the maintenance records
- Make sure that any required documentation is delivered to the aircraft owner/operator

End of Testing Procedure

Successful completion of the preceding Testing Procedure section of this bulletin is adequate to ensure proper load and configuration of the new software covered by this bulletin. This test procedure is intended to verify the serviceability of the appliance only and does not verify or otherwise validate the airworthiness of the installation.

MATERIAL INFORMATION

G1000, DA42NG Software

To accomplish this update, the technician must have a G1000, DA42NG Loader Card, Garmin P/N 010-00670-03.

QTY	Part Number	Description
1	010-00670-03	G1000 Software Loader Card (Diamond DA42NG)

ADDITIONAL INFORMATION

NA