



US Department  
of Transportation  
Federal Aviation  
Administration

## MAJOR REPAIR AND ALTERATION (Airframe, Powerplant, Propeller, or Appliance)

Form Approved  
OMB No. 2120-0020  
11/30/2007

Electronic Tracking Number

For FAA Use Only

INSTRUCTIONS: Print or type all entries. See Title 14 CFR §43.9, Part 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. §44701). Failure to report can result in a civil penalty for each such violation. (49 U.S.C. §46301(a))

<b>1. Aircraft</b>	Nationality and Registration Mark N8831M	Serial No. TD-574	
	Make Beech	Model D95	Series
<b>2. Owner</b>	Name (As shown on registration certificate) Robert McMeekin R Jr	Address (As shown on registration certificate) Address 7435 Arrowood RD	
		City Bethesda State MD	Zip 20817 Country USA

### 3. For FAA Use Only

4. Type		5. Unit Identification			
Repair	Alteration	Unit	Make	Model	Serial No.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	AIRFRAME	_____	(As described in Item 1 above)	_____
<input type="checkbox"/>	<input type="checkbox"/>	POWERPLANT			
<input type="checkbox"/>	<input type="checkbox"/>	PROPELLER			
<input type="checkbox"/>	<input type="checkbox"/>	APPLIANCE	Type		
			Manufacturer		

### 6. Conformity Statement

<b>A. Agency's Name and Address</b>		<b>B. Kind of Agency</b>		<b>C. Certificate No.</b>  ZV8R725X
Name <u>SMART Avionics Inc</u>		<input type="checkbox"/> U. S. Certificated Mechanic		
Address <u>186 Airport Road</u>		<input type="checkbox"/> Foreign Certificated Mechanic		
City <u>Marietta</u> State <u>PA</u>		<input checked="" type="checkbox"/> Certificated Repair Station		
Zip <u>17547</u> Country <u>USA</u>		<input type="checkbox"/> Certificated Maintenance Organization		

D. I certify that the repair and/or alteration made to the unit(s) identified in item 5 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual <u>Benjamin M Travis</u> <i>Ben M Travis</i> <u>2-74-22</u>
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### 7. Approval for Return to Service

Pursuant to the authority given persons specified below, the unit identified in item 5 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is  Approved  Rejected

BY	FAA Fit. Standards Inspector	Manufacturer	Maintenance Organization	Persons Approved by Canadian Department of Transport
	FAA Designee <input checked="" type="checkbox"/>	Repair Station	Inspection Authorization	Other (Specify)

Certificate or Designation No. ZV8R725X	Signature/Date of Authorized Individual <u>Benjamin M Travis</u> <i>Ben M Travis</i> <u>2-14-22</u>
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**NOTICE**

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

**8. Description of Work Accomplished**

(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)

N8831M

2/14/22

Nationality and Registration Mark

Date

**GI 275 MFD Installation**

Removed Vacuum Attitude Ind. Removed LH and RH Vacuum Pumps, Vacuum Indicator Vacuum regulator, Vacuum Filter and associated plumbing. Installed Vacuum pump drive covers P/N SL60430 with new gasket P/N 8313.

Installed Garmin GI 275 with ADHRS P/N 011-04489-10 MFD in pilots instrument panel. System was installed in accordance with Garmin installation manual 190-00246-10. System was interfaced to existing Pitot Static system for airdata information, GTN 750 and GTN 650 for navigation information, and GTX345 for ADSB Information. System installation was installed to meet FAA STC SA026585SE.

Installed Garmin GSB15 USB power outlet P/N 011-04937-00 S/N 63M062267 in instrument panel in accordance with Garmin installation manual 190-00303-A3. The GSB15 is manufactured to FAA TSO C71. The GSB15 USB outlets are powered by a powered by a 5 amp milspec circuit breaker P/N 7274-2-5 located on the avionics DC buss.

All workmanship was accomplished in accordance with the guidelines of AC 43.13-1B chapters 7 sections 2, 4 chapter 10 section 1, chapter 11 sections 1 thru 12 & chapter 12 sections 1, 2 and AC43.13-2B chapters 1 section 100, chapter 2 sections 203, 207, 209 and chapter 3 sections 304, 306, 307, 308 and 310.

Electrical load does not exceed 80% of aircraft electrical system capacity.

The Aircraft weight and balance was calculated and the equipment list was updated to reflect this change.

See attached ICA for instructions for continued airworthiness.

Additional Sheets Are Attached



### 3.1 Airworthiness Limitations

There are no new (or additional) airworthiness limitations associated with this equipment and/or installation.

The Airworthiness Limitations section is FAA approved and specifies maintenance required under §§ 43.16 and 91.403 of Title 14 of the Code of Federal Regulations unless an alternative program has been FAA approved.

FAA APPROVED

*JR Brownell*

JR Brownell

ODA STC Unit Administrator

ODA-240087-CE

7/22/2021  
Date

## **3.2 Servicing Information**

There are no servicing requirements for the GI 275 system. In the event of a system or LRU failure, troubleshoot the GI 275 system in accordance with Section 4.

### **3.2.1 Periodic Maintenance Instructions**

GI 275 system LRUs are designed to detect internal failures. A thorough self-test is executed automatically upon application of power to the units, and built-in tests are continuously executed while the LRUs are operating. Detected errors are indicated on the GI 275 display via failure annunciations, system messages, or a combination of the two. A list of reported errors for the system can be printed in the form of a maintenance log using the instructions provided in Section 4.1.

### **3.2.2 Special Tools**

A milliohm meter with an accuracy of  $\pm 0.1 \text{ m}\Omega$  (or better) is required to measure the electrical bonding between the GI 275 system components and aircraft ground.

A pitot-static ground tester is required for internal ADAHRS and standby instrument checkout procedures and maintenance.

### 3.3 Maintenance Intervals

**Table 3-1 Periodic Maintenance**

Item	Description/ Procedure	Interval
GI 275 System Visual Inspection	All installed system LRUs, switches, knobs, and wiring harnesses must be inspected to ensure continued integrity of the installation. The inspection must be performed in accordance with Section 3.4.	12 calendar months
Backup Battery Check	If installed, perform a Backup Battery Check as described in Section 5.12.5.  If the backup battery does not pass the Backup Battery Check, it must be replaced using the procedure found in Section 5.5.	12 calendar months
EIS Annunciator Lamp Check	If an EIS annunciator(s) is installed, perform a check of the annunciator lamps using the following procedure: <ol style="list-style-type: none"> <li>1. Power on the GI 275 directly interfaced to the annunciator in Configuration mode.</li> <li>2. Navigate to <i>Diagnositics</i> → <i>Discrete Outputs</i>.</li> <li>3. Toggle the state of the Engine Caution and Engine Warning discrete outputs to <i>Active</i>.</li> <li>4. Verify that the respective engine annunciator lights have illuminated.</li> <li>5. Toggle the state of the Engine Caution and Engine Warning discrete outputs to <i>Inactive</i>.</li> </ol>	12 calendar months
AHRS Magnetic Field Model Update	The GI 275 Integrated ADAHRS utilizes an Earth magnetic field model that is updated once every 5 years as part of the Aviation Database maintained by the owner/operator. If the magnetic model is not up-to-date, the unit will issue an alert upon start-up indicating the model has expired. A Service Bulletin containing the updated magnetic field model and instructions for installation can be obtained from the <a href="#">Dealer Resource Center</a> or by contacting Garmin.	Every 5 years
Electrical Bonding Check	Perform an electrical bonding check of the GI 275 system LRUs in accordance with Section 3.5.	Every 2000 flight hours or 10 years, whichever comes first
Altimeter Checks	Test according to 14 CFR §43 Appendix E. Refer to the pitot-static checkout procedure in Section 5.14.2 for system-specific checkout procedure.	Interval must be in accordance with Title 14 CFR §91.411 and 91.413
Lightning Damage Check	Conduct an inspection of the GI 275 system in accordance with Section 3.7.	After a suspected or actual lightning strike
Equipment Removal and Replacement	Removal and replacement of the GI 275 system LRUs can be accomplished by referring to Section 5 for instructions.	On Condition

Item	Description/ Procedure	Interval
Cleaning GI 275 Touchscreen	The display can be cleaned with a soft cotton cloth dampened with clean water. DO NOT use any chemical cleaning agents. Care should be taken to avoid scratching the surface of the display.	On Condition
Display Backlight	Over time, the backlight lamp may dim and the display may not perform as well in direct sunlight conditions. The user must determine by observation when the display brightness is not suitable for its intended use. Contact a Garmin authorized repair station when the backlight lamp requires service.	On Condition

### 3.4 Visual Inspection

Operation of the GI 275 system is not permitted unless an inspection, as described in this section, has been completed within the preceding 12 calendar months. Conduct the following visual inspection of the GI 275 system LRUs and associated wiring harnesses to ensure installation integrity:

1. Inspect all units for security of attachment, including visual inspection of brackets and other supporting structure attaching all units to the airframe.
2. Inspect all switches, annunciators, knobs, and buttons for legibility.
3. Visually inspect each unit's wiring (including electrical bonding straps), overbraid, and connectors for chafing, deterioration, damage, or wear.
4. Visually check for any signs of corrosion.

#### 3.4.1 Aluminum Foil Tape (Non-metallic Aircraft Only)

Any aluminum foil tape used in the GI 275 installation for grounding of a GEA 24 or GEA 110 (refer to Appendix A of this document) must be inspected every 12 calendar months. The inspection must verify that the foil tape is not torn, damaged, or showing signs of corrosion. If any of these conditions are found, the tape must be replaced in accordance with Section 4 of *GI 275 Part 23 AML STC Installation Manual*.

### 3.5 Electrical Bonding Maintenance Check

GI 275 LRU electrical bonding must be checked every 2,000 flight hours or 10 years, whichever occurs first. During the check, any cables normally attached to the LRU must be disconnected from the LRU. Resistance must be measured from a bare metal portion of the LRU to an airframe grounding location. The airframe grounding location should be as close to the LRU as possible, unless otherwise noted in Table 3-2. If the measured resistance is greater than applicable values in the table, bonding must be improved to meet applicable requirements for a new installation in accordance with Section 4 of *GI 275 Part 23 AML STC Installation Manual*.

**Table 3-2 Electrical Bonding Maintenance Requirements**

LRU	Maintenance Requirement
GI 275 Base GI 275 ADAHRS GI 275 ADAHRS+AP	5 mΩ (from unit to instrument panel)
Engine Annunciator(s)	20 mΩ (from unit to instrument panel)
GEA 24 GEA 110	5 mΩ (from unit to local structure)
GTP 59 GMU 44B	5 mΩ (or electrically isolated per Appendix D of the <i>GI 275 installation manuals listed in Table 1-1</i> )
GMU 11	None, except when overbraid is required. Overbraid bond must meet 5 mΩ.
GSB 15	5 mΩ (from unit to instrument panel or local structure)

### 3.6 Overhaul Period

The system does not require overhaul at a specific time period. Power on self-test and continuous BIT will monitor the health of the GI 275 system. If any LRU indicates an internal failure, the unit may be removed and replaced. Refer to Section 4 of this document for fault corrective actions.

### 3.7 Special Inspection Requirements

After a suspected lightning strike, the following actions must be performed for the specified LRU:

#### **GTP 59 OAT Probe**

Inspect the GTP 59 for signs of lightning damage. Check the self-sealing washer (P/N 212-00026-00) used on the probe tip outside of the aircraft for any evidence of melting or lack of seal. Replace the washer if damaged. If there is evidence of lightning strike to the OAT or any lightning damage, replace the GTP 59 OAT Probe.

Tube-and-fabric aircraft must replace the OAT probe bond strap (if installed) in accordance with Section 4 of the GI 275 installation manuals (refer to Table 1-1).

#### **GMU 11/44B**

Aircraft with a GMU mounted in the wingtip of metallic aircraft with non-metallic wingtip covers must inspect the magnetometer installation for the following conditions:

1. Check the GMU magnetometer body and mount for scorching, soot, melting, pitting, denting, or discoloration.
2. Check the GMU connectors for melting or pin damage.
3. Check the cable overbraid for pinching, melting, or evidence of arcing.
4. Check the lug for evidence of arcing and verify that the lug is still secured to the overbraid.
5. Check electrical bonding between the GMU overbraid and adjacent aircraft structure. Resistance should be less than 5 m $\Omega$ .
6. If any of these checks shows evidence of a lightning strike, replace the overbraid assembly and affected components in accordance with Section 4 of *GI 275 Part 23 AML STC Installation Manual*.

Perform the Magnetic Interference Check in accordance with Section 6 of *GI 275 Part 23 AML STC Installation Manual*. The purpose of this check is to ensure the structure around the GMU did not get magnetized by the lightning event to the point of affecting magnetometer performance.

### 3.8 Application of Protective Treatments

None.

### 3.9 Data Relative to Structural Fasteners

Data relative to structural fasteners, such as type, torque, and installation requirements can be found in Section 5 of this manual.

### 3.10 Additional Instructions

None.