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# **1. INTRODUCTION**

## **1.1 PURPOSE**

This document is designed for use by the installing agency of the GTX 32/33/33D Remote Transponder as Instructions for Continued Airworthiness in response to Federal Aviation regulation (FAR) Part 23.1529, and Part 23 Appendix G. They include information required by the operator to adequately maintain the GTX 32/33/33D.

## **1.2 Scope**

This document identifies the Instruction for Continued Airworthiness for the modification of the aircraft for installation of the Garmin GTX 32/33/33D transponder. It applies to aircraft altered by installation of the Garmin GTX 32/33/33D system.

## **1.3 Document Revision**

This document refers to other documents for specific information that is either part of the installation package or an existing part of the aircraft's permanent records.

This document shall be released, archived, and controlled in accordance with Garmin ENG-008, . As such when this and other documents are revised, the entire document is revised and the new revision nomenclature is changed on each page of the revised document. Typically change bars are utilized to direct the reader to changed sections within the document.

Any Garmin documents that are not released are clearly labeled "PRELIMINARY" or "DRAFT" in the revision block on each page or by annotating the document with a "water mark" indicating "PRELIMINARY" or "DRAFT" .

## **1.4 Document Distribution**

This document, or the information contained within, will be retained in the aircraft's permanent records. The latest revision of this document will be available on the Garmin website (garmin.com). A Garmin Service Letter, describing the ICA revision, will be sent to dealers and GTX 32/33 owners of record if revision is determined to be significant. Each revision will be approved as described in Section 2.15 of this document.

## **1.5 Airworthiness Limitations Section**

The airworthiness limitations section is FAA approved and specifies inspections and other maintenance required under §43.16, §91.403 and §91.413 of the Federal Aviation Regulations (FAR) unless an alternative program has been FAA approved.

There are no mandatory replacement times for the GTX 32/33/33D in this STC installation. There are no mandatory structural inspections associated with this STC.

## 1.6 Permission to Use Certain Documents

Permission is granted to any corporation or person applying for approval of a Garmin GTX 32/33/33D to use and reference appropriate STC documents to accomplish the Instructions for Continued Airworthiness and show compliance with STC engineering data. This permission does not construe suitability of the documents. It is the responsibility of the applicant to determine the suitability of the documents for the ICA.

## 1.7 Definitions

The following terminology is used within this document:

- 1) **AC:** Advisory Circular
- 2) **ACO:** Aircraft Certification Office
- 3) **AEG:** Aircraft Evaluation Group
- 4) **CFR:** Code of Federal Regulations
- 5) **DER:** Designated Engineering Representative
- 6) **FAA:** Federal Aviation Administration
- 7) **IAW:** In Accordance With
- 8) **ICA:** Instructions for Continued Airworthiness
- 9) **PMI:** Primary Manufacturing Inspector
- 10) **POI:** Primary Operations Inspector
- 11) **STC:** Supplemental Type Certificate
- 12) **TC:** Type Certification or Type Certificate
- 13) **TSO:** Technical Standard Order

## 1.8 Reference Documents

### 1.8.1 Garmin

- 1) ENG-008, ....*Engineering Document Release and Archive*
- 2) 190-00303-60 *GTX 32 Transponder Installation Manual*
- 3) 190-00303-61 *GTX 33, GTX 33D Transponder Installation Manual*
- 4) 005-C0187-00 *GTX 32/33/33D Remote Transponder STC Master Data List*
- 5) 560-0928-01 *GNS 480 (CNX80) Color GPS/Nav/Com Installation Manual*
- 6) 560-0984-01 *GNS 480 (CNX80) Color GPS/Nav/Com Pilot's Guide*

## 2. INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

### 2.1 Introduction

Content, Scope, Purpose and Arrangement:	This document identifies the Instruction for Continued Airworthiness for the modification of the aircraft by installation of the Garmin GTX 32/33/33D remote transponder.
Applicability:	Applies to aircraft altered by installation of the Garmin GTX 32/33/33D remote transponder.
Definition of Abbreviations:	See Section 1.7
Precautions:	None
Units of measurement:	None
Referenced publications: <i>(or later FAA approved revisions)</i>	190-00303-60 Rev. A <i>GTX 32 Transponder Installation Manual</i>  190-00303-61 Rev. C <i>GTX 33, GTX 33D Transponder Installation Manual</i>  005-C0187-00 Rev. A <i>GTX 32/33/33D Remote Transponder STC Master Data List</i>
Distribution:	This document should be included in the permanent aircraft records.

### 2.2 Description of Alteration

The Garmin GTX 32/33/33D is installed in the aircraft as a remote-mount unit. The GTX 32/33/33D interfaces to the pilot through the the Garmin GNS 480 (CNX80). The interface supports full control of all transponder functions. GTX 33/33D unit TIS data may be displayed by the GNS 480 (CNX80) The GTX 33/33D may also be interfaced to a multifunction display for additional display of traffic information.

### 2.3 Control, Operating Information

The GTX 32/33/33D does not have a direct pilot interface. The GTX 32/33 is controlled via the GNS 480 (CNX80). Consult the GNS 480 (CNX80) Pilot's Guide for system operation and self-test information.

### 2.4 Servicing Information

None. In the event of system failure, return the unit to the manufacturer or an approved repair station.

## **2.5 Periodic Maintenance Instructions**

Detected errors in transponder communications or functioning are indicated by pop-up messages on the GNS 480 (CNX80), and maintenance is on-condition. If the GTX 32/33 is interfaced to an optional external MFD, operational status may also be indicated on the interfaced MFD. At an aircraft annual inspection, conduct a visual inspection on the GTX 32/33/33D and its wire harness to insure continued installation integrity. Visually inspect wiring harness to insure no chafing or wire routing problems.

## **2.6 Removal and Replacement Information**

If the GTX 32/33/33D unit is removed and reinstalled, verify that the GTX 32/33/33D unit power-up self-test sequence is successfully completed and that no failure messages are annunciated on any interfaced controller or MFD.

If the GTX 32/33/33D unit is removed for repair and reinstalled, or if the GTX 32/33/33D unit is removed and replaced with a different GTX 32/33/33D unit, then follow 'Post Installation Configuration and Checkout' procedures contained in the GTX 32/33/33D Installation Manual listed in section 2.1 of this document, and verify that the GTX 32/33/33D unit power-up self-test sequence is successfully completed and that no failure messages are annunciated on any interfaced controller or MFD.

If any work has been done on the aircraft that could affect the system wiring, antenna cable, or any interconnected equipment, verify that the GTX 32/33/33D unit power-up self-test sequence is successfully completed and that no failure messages are annunciated on any interfaced controller or MFD.

Note: There are no special handling requirements for the GTX 32/33/33D.

## **2.7 Diagrams**

Refer to the GTX 32/33/33D Installation Manual (listed under reference documentation in section 2.1 of this document) for drawings applicable to this installation.

## **2.8 Periodic Inspection Requirements**

The GTX 32/33 requires ATC transponder testing and inspection at least every 2 years in accordance FAR 91.413.

## **2.9 Special Inspection Requirements**

None.

## **2.10 Application of Protective Treatments**

None.

## **2.11 Data Relative to Structural Fasteners**

None.

## **2.12 Special Tools**

No special tools are required for system checkout. See GTX 32/33/33D Installation Manual listed under reference documentation in section 2.1 of this document.

## **2.13 Additional Instructions for Aircraft Operating under FAR 121/135**

1. Aircraft Electrical Loads: Perform aircraft electrical system load analysis. See GTX 32/33/33D Installation Manual listed in section 2.1 of this document.
2. Methods of balancing flight controls: N/A.
3. Special Repair Methods applicable to the airplane: See certificate holder's General Maintenance Manual for instructions.

## **2.14 Overhaul Period**

The system does not require overhaul at a specific time period. Power on self-test will indicate the health of the GTX 32/33/33D. If the unit indicates an internal failure, the unit may be removed and replaced.

## **2.15 Revision**

To revise this ICA, a letter must be submitted to the ACO for approval along with the revised ICA. The ACO will obtain AEG acceptance, and issue an approval letter for the revised ICA. After ACO approval, Garmin AT will release the revised ICA for customer use, and provide any required notification of the revision.

## **2.16 Assistance**

Flight Standards Inspectors or the certificate holder's PMI have the required resources to respond to questions regarding this ICA. In addition, the customer may refer questions regarding this equipment and its installation to the manufacturer, Garmin International. Garmin International customer assistance may be contacted during normal business hours via telephone or email.

## **2.17 Implementation and Record Keeping**

For operators under FAR 91, the owner/operator is responsible for ensuring the ICA is made part of the applicable §91.409 inspection program for their aircraft.

For operators under FAR 121/135, this ICA must be incorporated into the operator's approved maintenance program through coordination and approval with the certificate holder's PMI/POI as applicable.

