US Department
of Transportation
Federal Aviation
Administration

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

OMB No. 2120-0020 Exp: 5/31/2018	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))

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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.

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

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

For FAA Use Only

Federal Aviation Administration	on n	(Airframe, Powerplant, Propeller, or Appliance)										
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# NOTICE

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- 1 REMOVED A GARMIN GNS530 GLOBAL NAVIGATION SYSTEM, PART NUMBER (PIN) 011-00550-10, SERIAL NUMBER (SIN) 78411401; THAT WAS PREVIOUSLY INSTALLED UNDER FAA FORM 337 FIELD APPROVAL DATED 10-27-2003 WITH ASSOCIATED GARMIN GNS530 FAA APPROVED FLIGHT MANUAL SUPPLEMENT (AFMS) DATED 10-21-2003; AND RETURNED UNIT TO GARMIN INTERNATIONAL FOR GNS530W WIDE AREA AUGMENTATION SYSTEM (WAAS) FACTORY UPGRADE:
- 2. THE FACTORY UPGRADED GNS530W GLOBAL NAVIGATION SYSTEM, P/N 011-01064-40, S/N 78411401, WAS INSTALLED IN THE EXISTING GNS530 RADIO RACK MOUNTING LOCATION, AND NO WIRING CHANGES WERE MADE TO THE PREVIOUS INSTALLATION. THE GNS530W WAAS UPGRADE WAS COMPLETED IN ACCORDANCE WITH THE GARMIN GNS500W SERIES TECHNICAL STANDARD ORDER (TSO) INSTALLATION MANUAL, P/N 190-00357-02, REV L, DATED 02-24-2016; AND THE GARMIN 400W / 500W SERIES STO UPGRADE INSTALLATION MANUAL, P/N 190-00357-06, REVISION E; DATED JANUARY 15, 2014.
- 3. A GARMIN GN\$500W SERIES PILOT'S GUIDE AND REFERENCE, P/N 190-00357-00, Rev K, DATED DECEMBER 31, 2015; A GN\$500W SERIES QUICK REFERENCE GUIDE, P/N 190-00357-01; REV J, DATED DECEMBER 31, 2015; A GARMIN 400W/500W SERIES OPTIONAL DISPLAYS PILOT'S GUIDE ADDENDUM, P/N 190-00356-30, REV M, DATED DECEMBER 31, 2015; AND A GARMIN 400W/500W SERIES DISPLAY INTERFACES PILOT'S GUIDE ADDENDUM, P/N 190-00356-31, REV D, DATED DECEMBER 31, 2008; WERE PLACED IN THE AIRCRAFT RECORDS. A FAA APPROVED GN\$500W SERIES AFMS, P/N 190-00357-03, REV E, DATED NOVEMBER 20, 2014; WAS PLACED IN THE AIRCRAFT RECORDS.
- 4. THE MAXIMUM CONTINUOUS ELECTRICAL LOAD DOES NOT EXCEED 80% OF TOTAL RATED CAPACITY PER AC 43:13-18 CHANGE 1, PARAGRAPH 11-35.
- 5. A LOGBOOK ENTRY UNDER WORK ORDER NUMBER 6645 WAS ENTERED IN THE AIRCRAFT RECORDS. WEIGHT AND BALANCE RECORDS AND EQUIPMENT LIST REVISED.
- 6. POST-INSTALLATION GROUND CHECKS WERE PERFORMED IN ACCORDANCE WITH THE MANUFACTURER INSTALLATION MANUALS AND FOUND TO OPERATE PROPERLY.
- 7. FACTORY SUPPLIED GARMIN 500W SERIES INSTRUCTIONS FOR CONTINUED AIRWORTHINESS, DOCUMENT NUMBER 190-00357-65, REV D, DATED 11-20-2014, ARE ATTACHED AS ADDITIONAL SHEETS, \*\*\* END\*\*\*

Garmin International, Inc. 1200 E. 151st Street Olathe, Kansas 66062 U.S.A.

#### FAA APPROVED

AIRPLANE FLIGHT MANUAL SUPPLEMENT

SUPPLEMENTAL AIRPLANE FLIGHT MANUAL

for the

Garmin GNS 500W, 500WT, 530W, 530AW, 530WT, or 530AWT

GPS/SBAS Navigation System

as installed in

Grumman G-ZIA

Make and Model Airplane

Registration Number: N6662 E Scrial Number: B-100

This document serves as an Airplane Flight Manual Supplement or as a Supplemental Airplane Flight Manual when the aircraft is equipped with the Garmin GNS 500W, 500WT, 530W, 530AW, 530WT, or 530AWT GPS/SBAS Navigation System. This document must be carried in the airplane at all times when the Garmin GNS unit is installed in accordance with STC SA01933LA-D. This document must be incorporated into the FAA Approved Airplane Flight Manual or provided as an FAA Approved Supplemental Airplane Flight Manual.

The information contained herein supplements the information in the FAA Approved Airplane Flight Manual. For limitations, procedures, loading and performance information not contained in this document, refer to the FAA Approved Airplane Flight Manual, markings, or placards.

Michael Warren **ODA STC Unit Administrator** Garmin International, Inc. ODA-240087-CE

Date:

100-2014

AFMS, Garmin GNS 5XXW GPS/SBAS System FAA APPROVED

190-00357-03 Rev. E

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		Lo	OG OF REVISIONS	
		Page		
Rev. No.	No.	Date	Description	FAA Approved
A Original	All	11-20-07	Complete Supplement	Seyed-Youssef Hashemi Mgr. Flt. Test Br., ANM-160L FAA, Los Angeles ACO
				Transport Airplane Directorate  Date: Nov. 20, 2007
В	All	07/31/09	Added '-D' to STC number, added LP approach type	David G Armstrong  ODA STC Unit Administrator ODA-240087-CE Garmin International, Inc.
С	All	03/21/13	Complete Rewrite	Michael Warren
				ODA STC Unit Administrator ODA-240087-CE Garmin International, Inc.
D	10, 14	01/27/14	Added LP +V approach type	Michael Warren  ODA STC Unit Administrator ODA-240087-CE Garmin International, Inc.
Е	8,9	11/20/14	Updated document revisions and added Flight Stream 210	See Page 1
	11		Added note for Flight Stream 210	
	14		Added sections 2.14 and 2.15	
	15		Modified TAWS warning procedure	
	22		Updated GTN Crossfill section	
	23		Added Section 7.3	

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#### Section 1. GENERAL

# 1.1 Garmin 5XXW Series GPS/WAAS Nav Com

The Garmin GNS Series GPS/WAAS Navigator is a panel-mounted product that contains a GPS/WAAS receiver for GPS approved primary navigation under TSO-C146a, (plus optional VHF Com and VHF Nav radios) in an integrated unit with a moving map and color display. The 5XXW Series unit features a graphical display which may also be used to depict traffic, weather, or terrain data. Optional TAWS annunciation and audio is available in some installations.

The navigation functions are operated by dedicated keys and graphical menus which are controlled by the buttons and the dual concentric rotary knob along the bottom and right side of the display.

Optional VHF Com and VHF Nav radio functions are controlled via dedicated buttons and knobs on the left side of the display and adjacent to frequencies they are controlling.

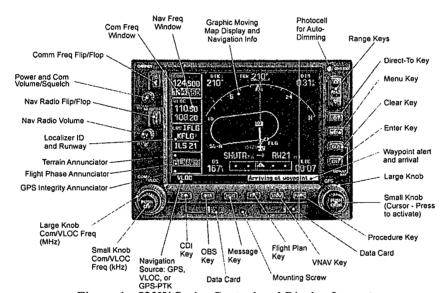


Figure 1 - 530W Series Control and Display Layout

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# 1.2 GPS/SBAS TSO-C146a Class 3 Operation

The GNS complies with AC 20-138A and has airworthiness approval for navigation using GPS and SBAS (within the coverage of a Satellite Based Augmentation System complying with ICAO Annex 10) for IFR en route, terminal area, and non-precision approach operations (including those approaches titled "GPS", "or GPS", and "RNAV (GPS)" approaches). The Garmin GNSS navigation system is composed of the GNS navigator and antenna, and is approved for approach procedures with vertical guidance including "LPV" and "LNAV/VNAV" and without vertical guidance including "LP" and "LNAV," within the U.S. National Airspace System.

The Garmin GNSS navigation system complies with the equipment requirements of AC 90-105 and meets the equipment performance and functional requirements to conduct RNP terminal departure and arrival procedures and RNP approach procedures without RF (radius to fix) legs. Part 91 subpart K, 121, 125, 129, and 135 operators require operational approval from the FAA.

The Garmin GNSS navigation system complies with the equipment requirements of AC 90-100A for RNAV 2 and RNAV 1 operations. In accordance with AC 90-100A, Part 91 operators (except subpart K) following the aircraft and training guidance in AC 90-100A are authorized to fly RNAV 2 and RNAV 1 procedures. Part 91 subpart K, 121, 125, 129, and 135 operators require operational approval from the FAA.

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Applicable to dual installations consisting of two Garmin GNSS units: The Garmin GNSS navigation system has been found to comply with the requirements for GPS Class II oceanic and remote navigation (RNP-10) without time limitations in accordance with AC 20-138A and FAA Order 8400.12A. The Garmin GNSS navigation system can be used without reliance on other long-range navigation systems. This does not constitute an operational approval.

The Garmin GNSS navigation system has been found to comply with the navigation requirements for GPS Class II oceanic and remote navigation (RNP-4) in accordance with AC 20-138A and FAA Order 8400.33. The Garmin GNSS navigation system can be used without reliance on other long-range navigation systems. Additional equipment may be required to obtain operational approval to utilize RNP-4 performance. This does not constitute an operational approval.

The Garmin GNSS navigation system complies with the accuracy, integrity, and continuity of function, and contains the minimum system functions required for P-RNAV operations in accordance with JAA Administrative & Guidance Material Section One: General Part 3: Temporary Guidance Leaflets, Leaflet No 10 (JAA TGL-10 Rev 1). The GNSS navigation system has one or more TSO-C146a Class 3 approved Garmin GNS Navigation Systems. The Garmin GNSS navigation system complies with the accuracy, integrity, and continuity of function, and contains the minimum system functions required for B-RNAV operations in accordance with EASA AMC 20-4. The Garmin GNSS navigation system complies with the equipment requirements for P-RNAV and B-RNAV/RNAV-5 operations in accordance with AC 90-96A CHG 1. This does not constitute an operational approval.

Garmin International holds an FAA Type 2 Letter of Acceptance (LOA) in accordance with AC 20-153 for database integrity, quality, and database management practices for the navigation database. Flight crew and operators can view the LOA status at FlyGarmin.com then select "Type 2 LOA Status."

Navigation information is referenced to the WGS-84 reference system.

Note that for some types of aircraft operation and for operation in non-U.S. airspace, separate operational approval(s) may be required in addition to equipment installation and airworthiness approval.

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# Section 2. LIMITATIONS

#### 2.1 Pilot's Guide

The Quick Reference Guide, part number and revision listed below (or later applicable revisions), must be immediately available for the flight crew whenever navigation is predicated on the use of the 5XXW Series unit.

• 500W Series Quick Reference Guide

P/N 190-00357-01 Rev H

The Pilot's Guide Addendum, part number and revision listed below (or later applicable revision), must be immediately available for the flight crew whenever one or more of the following units are installed and utilized with the 5XXW Series unit:

GDL 69/69A XM Satellite Data link GDL 88 ADS-B Transceiver GTX 330/330D TIS Garmin TAWS (GPS 500WT & GNS 530WT) GTS 8XX Series TAS Flight Stream 210

• 400W/500W Series Optional Displays

P/N 190-00356-30 Rev L

The Pilot's Guide Addendum, part number and revision listed below (or later applicable revision), must be immediately available for the flight crew whenever one or more of the following units are installed and utilized with the 5XXW Series unit:

Stormscope® Lightning Detection System Skywatch® Traffic Advisory System Bendix/King® Traffic Advisory System Avidyne/Ryan TCAD Traffic System

• 400W/500W Series Display Interfaces

P/N 190-00356-31 Rev D

# 2.2 Kinds of Operation

This AFM supplement does not grant approval for IFR operations to aircraft limited to VFR operations. Additional aircraft systems may be required for IFR operational approval. Systems limited to VFR shall be placarded in close proximity to the 5XXW Series unit: "GPS LIMITED TO VFR USE ONLY".

# 2.3 System Software

This AFMS/AFM is applicable to the software versions shown in Table 1.

The Main and GPS software versions are displayed on the start-up page immediately after power-on.

Software Item	Approved Software Version (or later FAA approved versions for this STC)			
	SW version	As displayed on unit		
Main SW Version	5.20	5.20		
GPS SW Version	5.0	5.0		
Flight Stream 210	2.11	2.11 (Displayed on GNS)		

Table 1 - Required Equipment

# 2.4 Navigation database

GPS/SBAS based IFR enroute, oceanic, and terminal navigation is prohibited unless the flight crew verifies and uses a valid, compatible, and current navigation database or verifies each waypoint for accuracy by reference to current approved data.

"GPS", "or GPS", and "RNAV (GPS)" instrument approaches using the Garmin navigation system are prohibited unless the flight crew verifies and uses the current navigation database. GPS based instrument approaches must be flown in accordance with an approved instrument approach procedure that is loaded from the navigation database.

Discrepancies that invalidate a procedure should be reported to Garmin International. The affected procedure is prohibited from being flown using data from the navigation database until a new navigation database is installed in the aircraft and verified that the discrepancy has been corrected. Navigation database discrepancies can be reported at FlyGarmin.com by selecting "Aviation Data Error Report." Flight crew and operators can view navigation database alerts at FlyGarmin.com then select "NavData Alerts."

If the navigation database cycle will change during flight, the flight crew must ensure the accuracy of navigation data, including suitability of navigation facilities used to define the routes and procedures for flight. If an amended chart affecting navigation data is published for the procedure, the database must not be used to conduct the procedure.

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# 2.5 Flight Planning

For flight planning purposes, in areas where SBAS coverage is not available, the flight crew must check RAIM availability.

- Within the United States, RAIM availability can be determined using the Garmin WFDE Prediction program, Garmin part number 006-A0154-04 software version 3.00 or later approved version with Garmin approved antennas or the FAA's enroute and terminal RAIM prediction website: www.raimprediction.net, or by contacting a Flight Service Station.
- Within Europe, RAIM availability can be determined using the Garmin WFDE Prediction program or Europe's AUGER GPS RAIM Prediction Tool at http://augur.ecacnav.com/augur/app/home.
- For other areas, use the Garmin WFDE Prediction program.

This RAIM availability requirement is not necessary if SBAS coverage is confirmed to be available along the entire route of flight. The route planning and WFDE prediction program may be downloaded from the Garmin website on the internet. For information on using the WFDE Prediction Program, refer to Garmin WAAS FDE Prediction Program, part number 190-00643-01, 'WFDE Prediction Program Instructions'.

For flight planning purposes, for operations within the U.S. National Airspace System on RNP and RNAV procedures when SBAS signals are not available, the availability of GPS RAIM shall be confirmed for the intended route of flight. In the event of a predicted continuous loss of RAIM of more than five minutes for any part of the intended route of flight, the flight shall be delayed, canceled, or rerouted on a track where RAIM requirements can be met. The flight may also be re-planned using non-GPS based navigational capabilities.

For flight planning purposes for operations within European B-RNAV/RNAV-5 and P-RNAV airspace, if more than one satellite is scheduled to be out of service, then the availability of GPS RAIM shall be confirmed for the intended flight (route and time). In the event of a predicted continuous loss of RAIM of more than five minutes for any part of the intended flight, the flight shall be delayed, canceled, or rerouted on a track where RAIM requirements can be met.

#### Applicable to dual installations consisting of two Garmin GNSS units:

For flight planning purposes, for operations where the route requires Class II navigation the aircraft's operator or flight crew must use the Garmin WFDE Prediction program to demonstrate that there are no outages on the specified route that would prevent the Garmin GNSS navigation system to provide GPS Class II navigation in oceanic and remote areas of operation that requires RNP-10 or RNP-4 capability. If the Garmin WFDE Prediction program indicates fault exclusion (FDE) will be unavailable for more than 34 minutes in accordance with FAA Order 8400.12A for RNP-10 requirements, or 25 minutes in accordance with FAA Order 8400.33 for RNP-4 requirements, then the operation must be rescheduled when FDE is available.

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Both Garmin GPS navigation receivers must be operating and providing GPS navigation guidance for operations requiring RNP-4 performance.

North Atlantic (NAT) Minimum Navigational Performance Specifications (MNPS) Airspace operations per AC 91-49 and AC 120-33 require both GPS/SBAS receivers to be operating and receiving usable signals except for routes requiring only one Long Range Navigation sensor. Each display computes an independent navigation solution based on its internal GPS receiver.

Whenever possible, RNP and RNAV routes including Standard Instrument Departures (SIDs), and Standard Terminal Arrival (STAR), routes should be loaded into the flight plan from the database in their entirety, rather than loading route waypoints from the database into the flight plan individually. Selecting and inserting individual named fixes from the database is permitted, provided all fixes along the published route to be flown are inserted. Manual entry of waypoints using latitude/longitude or place/bearing is prohibited.

It is not acceptable to flight plan a required alternate airport based on RNAV(GPS) LP/LPV or LNAV/VNAV approach minimums. The required alternate airport must be flight planned using an LNAV approach minimums or available ground-based approach aid.

Navigation information is referenced to the WGS-84 reference system, and should only be used where the Aeronautical Information Publication (including electronic data and aeronautical charts) conform to WGS-84 or equivalent.

#### NOTE

If flight plan information is imported from a portable electronic device utilizing the Flight Stream 210 Bluetooth® system, all waypoints and flight plan sequences must be verified by the crew.

# 2.6 Approaches

 Instrument approaches using GPS guidance may only be conducted when the GNS is operating in the approach mode. (LNAV, LNAV+V, L/VNAV, LPV, LP, or LP+V)

#### NOTE

Advisory vertical guidance deviation is provided when the GNS annunciates LNAV+V or LP +V. The controlling minimums remain LNAV or LP even when advisory vertical guidance is provided. Advisory vertical guidance information displayed on the VDI in this mode is only an aid to help flight crews comply with altitude restrictions. When using advisory vertical guidance, the flight crew must use the primary barometric altimeter to ensure compliance with all

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altitude restrictions in accordance with the LNAV or LP approach procedure.

- When conducting instrument approaches referenced to true North, the NAV Angle on the AUX-Units/Position page must be set to **True**.
- The navigation equipment required to join and fly an instrument approach procedure is indicated by the title of the procedure and notes on the IAP chart. Navigating the final approach segment (that segment from the final approach fix to the missed approach point) of an ILS, LOC, LOC-BC, LDA, SDF, MLS, VOR, TACAN approach, or any other type of approach not approved for GPS, is not authorized with GPS navigation guidance. GPS guidance can only be used for approach procedures with GPS or RNAV in the procedure title. When using the Garmin VOR/LOC/GS receivers to fly the final approach segment, VOR/LOC/GS navigation data must be selected and presented on the CDI of the pilot flying.
- Not all published Instrument Approach Procedures (IAP) are in the
  navigation database. Flight crews planning to fly an RNAV
  instrument approach must ensure that the navigation database
  contains the planned RNAV Instrument Approach Procedure and that
  approach procedure must be loaded from the navigation database into
  the GNS system flight plan by its name. Users are prohibited from
  flying any approach path that contains manually entered waypoints.
- IFR approaches are prohibited whenever any physical or visual obstruction (such as a throw-over yoke) restricts pilot view or access to the GNS and/or the CDI.

# 2.7 Autopilot Coupling

IFR installations of a Garmin 5XXW Series unit allow the operator to fly all phases of flight based on the navigation information presented to the pilot; however, not all modes may be coupled to the autopilot. All autopilots may be coupled in Oceanic (OCN), Enroute (ENR), and Terminal (TERM) modes; however, the FAA requires that vertical coupling of an autopilot for approaches be demonstrated to meet their intended function and provide safe and proper operation to published minimums. This installation is limited to:

Lateral coupling only for GPS approaches. Coupling to the vertical path for
GPS approaches is not authorized.

# 2.8 Terrain Proximity Function (All Units)

Terrain and obstacle information appears on the map and terrain display pages as red and yellow tiles or towers, and is depicted for advisory use only. Aircraft maneuvers and navigation must not be predicated upon the use of the terrain display. Terrain and obstacle information is advisory only and is not equivalent to warnings provided by TAWS.

The terrain display is intended to serve as a situational awareness tool only. By itself, it may not provide either the accuracy or the fidelity on which to base decisions and plan maneuvers to avoid terrain or obstacles.

# 2.9 TAWS Function (Equipped Units)

Flight crews are authorized to deviate from their current ATC clearance to the extent necessary to comply with TAWS warnings. Navigation must not be predicated upon the use of TAWS.

If an external TAWS annunciator panel is installed in the aircraft, this annunciator panel must be fully functional in order to use the TAWS system.

# 2.10 VNAV - Vertical Navigation Calculation Page

VNAV information accessible by pressing the "VNAV" button may be utilized for advisory information only. Use of VNAV information for Instrument Approach Procedures does not guarantee Step-Down Fix altitude protection, or arrival at approach minimums in a normal position to land.

# 2.11 Weather Display (Optional)

This limitation applies to data linked weather products from SiriusXM via a GDL 69/69A or FIS-B via a GDL 88.

Do not use data link weather information for maneuvering in, near, or around areas of hazardous weather. Information provided by data link weather products may not accurately depict current weather conditions.

Do not use the indicated data link weather product age to determine the age of the weather information shown by the data link weather product. Due to time delays inherent in gathering and processing weather data for data link transmission, the weather information shown by the data link weather product may be significantly older than the indicated weather product age.

Do not rely solely upon data link services to provide Temporary Flight Restriction (TFR) or Notice to Airmen (NOTAM) information. Not all TFRs and NOTAMS can be depicted on the GNS.

# 2.12 Traffic Display (Optional)

Traffic may be displayed on the GNS when connected to an approved optional TCAS I, TAS, TIS, or ADS-B traffic device. These systems are capable of providing traffic monitoring and alerting to the flight crew. Traffic shown on the display may or may not have traffic alerting available. The display of traffic is an aid to visual acquisition and may not be utilized for aircraft maneuvering.

# 2.13 Manual GTN Crossfill

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When Manual GTN Crossfill is in use, the crew must verify each flight plan leg prior to using the GNS to navigate. See section 7.2 for additional information.

# 2.14 Flight Stream 210 (Optional)

The Flight Stream 210 provides the ability for the crew to import flight plans from a portable electronic device to the GNS. The crew must verify all flight plan and waypoint information imported from a portable electronic device prior to use on the GNS. See section 7.3 for additional information.

# 2.15 Portable Electronic Devices

This STC does not relieve the operator from complying with the requirements of 91.23 or any other operational regulation regarding portable electronic devices.

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# Section 3. EMERGENCY PROCEDURES

# 3.1 Emergency Procedures

# 3.1.1 TAWS WARNING

Red annunciator and aural	"PULL UP":
Autopilot	DISCONNECT
	INITIATE MAXIMUM POWER CLIMB
Airspeed	BEST ANGLE OF CLIMB SPEED
After Warning Ceases: Altitude	CLIMB AND MAINTAIN SAFE ALTITUDE ation, if appropriate.

#### NOTE

Only vertical maneuvers are recommended, unless either operating in visual meteorological conditions (VMC), or the flight crew determines, based on all available information, that turning in addition to the vertical escape maneuver is the safest course of action, or both.

# 3.2 Abnormal Procedures

# 3.2.1 LOSS OF GPS/SBAS NAVIGATION DATA

When the GPS/SBAS receiver is inoperative or GPS navigation information is not available or invalid, the GNS will enter one of two modes: Dead Reckoning mode (DR) or Loss Of Integrity mode (LOI). The mode is indicated on the GNS by an amber "DR" or "INTEG".

If the Loss Of Integrity annunciation is displayed, revert to an alternate means of navigation appropriate to the route and phase of flight.

If the Dead Reckoning annunciation is displayed, the map will continue to be displayed with an amber ownship icon. Course guidance will be removed on the CDI. Aircraft position will be based upon the last valid GPS position, then estimated by Dead Reckoning methods. Changes in true airspeed, altitude, heading, or winds aloft can affect the estimated position substantially. Dead Reckoning is only available in Enroute and Oceanic modes. Terminal and Approach modes do not support Dead Reckoning.

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If Alternate Navigation Sources (ILS, LOC, VOR, DME, ADF) Are Available:

# If No Alternate Navigation Sources Are Available:

DEAD RECKONING (DR) MODE:

Navigation ......USE GNS

# NOTE

All information normally derived from GPS will become less accurate over time.

LOSS OF INTEGRITY (LOI) MODE:

Navigation ......FLY TOWARDS KNOWN VISUAL CONDITIONS

#### NOTE

All information derived from GPS will be removed.

#### NOTE

The airplane symbol is removed from all maps. The map will remain centered at the last known position. "No GPS Position" will be annunciated in the center of the map.

#### 3.2.2 GPS APPROACH DOWNGRADE

During a GPS LPV, LNAV/VNAV, LP +V, or LNAV+V approach, if GPS accuracy requirements cannot be met by the GPS receiver prior to the Final Approach Fix, the GNS will downgrade the approach. The downgrade will remove vertical deviation indication from the VDI and change the approach annunciation accordingly from LPV, L/VNAV, LP +V, or LNAV+V to LNAV. The approach may be continued using the LNAV only minimums. After the Final Approach Fix has been passed, the approach will be aborted using the indications described below.

During a GPS approach in which GPS accuracy requirements cannot be met by the GPS receiver for any GPS approach type, the GNS will flag all CDI guidance and display a system message "ABORT APPROACH - Loss of Navigation". Immediately upon viewing the message, the unit will revert to Terminal navigation mode alarm limits. If the position integrity is within these limits lateral guidance will be restored and the GPS may be used to execute the missed approach, otherwise alternate means of navigation must be utilized.

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# 3.2.3 LOSS OF COM RADIO TUNING FUNCTIONS

# If alternate COM is available:

Communications ...... USE ALTERNATE COM

# If no alternate COM is available:

COM RMT XFR key (if installed)......PRESS AND HOLD FOR 2 SECONDS

#### NOTE

This procedure will tune the active COM radio the emergency frequency 121.5, regardless of what frequency is displayed on the GNS. Certain failures of the tuning system will automatically tune 121.5 without flight crew action.

# 3.2.4 TAWS CAUTION (Terrain or Obstacle Ahead, Sink Rate, Don't Sink)

When a TAWS CAUTION occurs, take corrective action until the alert ceases. Stop descending or initiate either a climb or a turn, or both as necessary, based on analysis of all available instruments and information.

#### 3.2.5 TAWS INHIBIT

The TAWS Forward Looking Terrain Avoidance (FLTA) and Premature Descent Alerts (PDA) functions may be inhibited to prevent alerting, if desired. Refer to GNS 400W/500W Optional Displays Addendum for additional information.

# To Inhibit TAWS:

Go to TERRAIN Page

Menu Button		PRESS
"Inhibit Terrain?"	***************************************	SELECT
Enter Button		PRESS

# 3.2.6 TER N/A and TER FAIL

If the amber **TER N/A** or **TER FAIL** status annunciator is displayed, the system will no longer provide TAWS alerting or display relative terrain and obstacle elevations. The crew must maintain compliance with procedures that ensure minimum terrain and obstacle separation.

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#### Section 4. NORMAL PROCEDURES

Refer to the 5XXW Series unit Quick Reference Guide defined in paragraph 2.1 on page 7 of this document for normal operating procedures. This includes all GPS operations, VHF COM and NAV, and Multi-Function Display information. For information on TIS traffic, data linked weather, or TAWS see the Pilot's Guide addendum for optional displays. For information on active traffic device or Stormscope operation and displays see the Pilot's Guide addendum for display interfaces.

The 5XXW Series unit requires a reasonable degree of familiarity to prevent operations without becoming too engrossed at the expense of basic instrument flying in IMC and basic see-and-avoid in VMC. Pilot workload will be higher for pilots with limited familiarity in using the unit in an IFR environment, particularly without the autopilot engaged. Garmin provides training tools with the Pilot's Guide and PC based simulator. Pilots should take full advantage of these training tools to enhance system familiarization.

4.1 Unit Power On	
Database	REVIEW EFFECTIVE DATES
Self TestVERIFY OUT	PUTS TO NAV INDICATORS
Self Test - TAWS Remote Annunciator (If Inst	alled):
PULL UP	ILLUMINATED
TERR	ILLUMINATED
TERR N/A	
TERR INHB	ILLUMINATED
Self Test - GPS Remote Annunciator (If Install	ed):
VLOC	ILLUMINATED
GPS	
INTG	ILLUMINATED
TERM	
WPT	ILLUMINATED
APR	ILLUMINATED
MSG	ILLUMINATED
SUSP	
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4.2 Before Takeoff	
System Messages and Annunciators	CONSIDERED

4.3 HSI and EHSI Operation

If an HSI is used to display navigation data from the GNS the pilot should rotate the course pointer as prompted on the GNS.

If an EHSI is used to display navigation data from the GNS the course pointer may autoslew to the correct course when using GPS navigation. When using VLOC navigation the course pointer will not autoslew and must be rotated to the correct course by the pilot. For detailed information about the functionality of the EHSI system, refer to the FAA approved Flight Manual or Flight Manual Supplement for that system.

#### **CAUTION**

The pilot must verify the active course and waypoint for each flight plan leg. The pilot must verify proper course selection each time the CDI source is changed from GPS to VLOC.

#### 4.4 Autopilot Operation

The GNS may be coupled to an optional autopilot, if installed in the aircraft, when operating as prescribed in the LIMITATIONS section of this manual.

Autopilots coupled to the GNS system in an analog (NAV) mode will follow GPS or VHF navigation guidance as they would with existing VOR receivers.

Autopilots that support GPSS or GPS Roll Steering in addition to the analog course guidance will lead course changes, fly arcing procedures, procedure turns, and holding patterns if coupled in GPSS mode.

For autopilot operating instructions, refer to the FAA approved Flight Manual or Flight Manual Supplement for the autopilot.

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#### Coupling the Autopilot during approaches 4.5

#### **CAUTION**

When the CDI source is changed on the GNS, autopilot mode may change. Confirm autopilot mode selection after CDI source change on the GNS. Refer to the FAA approved Flight Manual or Flight Manual Supplement for the autopilot.

This installation prompts the flight crew and requires the pilot to enable the
approach outputs just prior to engaging the autopilot in APR mode.

# To couple an approach:

Once established on the final approach course with the final approach fix as the active waypoint, the GNS will issue a flashing message indication with the following message "APR Guidance Available, Use PROC before A/P APR".

PROC Button	PRESS
"Enable A/P APR Outputs?"	SELECT
ENT Button	

If coupled, Autopilot will revert to ROL mode at this time.

Autopilot..... ENGAGE APPROACH MODE

This installation supports coupling to the autopilot in approach mode once vertical guidance is available.

#### To couple an approach:

Once established on the final approach course with the final approach fix as the active waypoint, the GNS will enable vertical guidance.

Vertical Guidance	CONFIRM AVAILABLE
Autopilot	ENGAGE APPROACH MODE

The autopilot does not support any vertical capture or tracking in this installation.

Analog only autopilots should use APR mode for coupling to LNAV approaches. Autopilots which support digital roll steering commands (GPSS) may utilize NAV mode and take advantage of the digital tracking during LNAV only approaches.

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4.6 Traffic Mode Selection (Optional)

If the GNS is interfaced to a traffic device, the GNS can be used to control the mode of the traffic system. This is accomplished by pressing the cursor knob while on the dedicated traffic page to enter/exit the traffic device menu. It is important to note that while the traffic device menu is active, the current state of the traffic system is not displayed. The state of the traffic device is only displayed once the traffic device menu is exited.

Section 5. PERFORMANCE

No change.

Section 6, WEIGHT AND BALANCE

See current weight and balance data.

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#### Section 7. SYSTEM DESCRIPTIONS

#### 7.1 Pilot's Guide

See Garmin 5XXW Series unit Pilot's Guide for a complete description of the 5XXW Series unit.

#### 7.2 Manual GTN Crossfill

Manual GTN Crossfill is a feature that will keep the GNS system in sync with a flight plan that is being used on the GTN system. The GTN will not automatically keep its flight plan in sync with changes made on the GNS system. Manual crossfill feature is "one way" – from the GTN to the GNS.

The GTN systems support a variety of procedure leg types that the GNS systems do not support. As such, it is normal and expected that the flight plan leg that is displayed on the GNS system will not always match the flight plan leg on the GTN system. Departure, arrival and approach procedures contain leg types that the GNS does not support. The GNS typically "skips" over these leg types and provides no guidance. Guidance may be available on the GTN but not on the GNS in these cases. The GNS will sequence the procedure as it normally would if Crossfill were not active. Once a leg type is reached that is supported on both the GTN and GNS systems, the systems will automatically sync to the same leg.

If the GNS is interfaced with a GTN and the GTN Crossfill feature is enabled on the GNS, then auto-switching from GPS to VLOC guidance on the CDI for ILS/LOC approaches will be disabled on the GNS.

If the flight plan on an interfaced GTN is altered while in a hold, the GNS will reinitiate guidance to the holding waypoint and sequence into the hold upon crossing the waypoint.

If the Missed Approach is activated on the GTN prior to reaching the Missed Approach Point, the GTN will automatically resume leg sequencing upon reaching the Missed Approach Point. The GNS will remain suspended upon reaching the Missed Approach Point and leg sequencing must be manually resumed.

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# 7.3 Flight Stream 210

The Flight Stream 210 provides wireless communication of specific flight plan information and GPS sensor data to a PED (Personal Electronic Device) from the GNS.

For details on the operation and features of the Flight Stream 210, please refer to the GNS 400W/500W Series Optional Displays, P/N 190-00356-30 Rev J.

For additional details about the Garmin supported devices and apps for use with the Flight Stream 210, please visit: http://garmin.com/connext/supported\_devices

# 500W Series

# **Instructions for Continued Airworthiness**

Document Number 190-00357-65 Rev. D

Garmin International, Inc. 1200 E. 151st Street Olathe, Kansas 66062 USA

# **Record of Revision**

Rev.	Date	Description of Change
1	10-19-06	Initial Release
Α	11-03-06	Revision for STC Issuance
В	07-30-09	Add the "-D" to STC number when reissued under ODA
С	02-28-13	Revise to support software version 5.02. Clarify inspections. Add electrical bonding check.
D	11-20-14	Revise to support software version 5.20 with Flight Stream 210

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### 1. INTRODUCTION

#### 1.1 PURPOSE

This document is designed for use by the installing agency of the Garmin Model 500W series GPS/WAAS Nav/Com as Instructions for Continued Airworthiness in response to Federal Aviation regulation (FAR) Part 23.1529, and Part 23 Appendix G. The ICA includes information required by the operator to adequately maintain the Garmin Models 500W series installed under Approved Model List (AML) STC SA01933LA-D.

### 1.2 Scope

This document identifies the Instruction for Continued Airworthiness for the modification of the aircraft for installation of the Garmin Models 500W series GPS/WAAS Nav/Com installed under Approved Model List (AML) STC SA01933LA-D. This includes the optional accessory to the GNS 500W, the Flight Stream 210.

#### 1.3 Document Control

This document shall be released, archived, and controlled in accordance with the Garmin document control system. When this document is revised, refer to Section 2.15 for information on how to gain FAA acceptance or approval and how to notify customers of changes.

## 1.4 Airworthiness Limitations Section

There are no additional Airworthiness Limitations as defined in 14 CFR § 23, Appendix G. G23.4 that result from this modification.

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

**FAA APPROVED** 

Michael Warren

Date

20-NOV-2014

**ODA STC Unit Administrator** 

ODA-240087-CE

#### 1.5 Permission to Use Certain Documents

Permission is granted to any corporation or person applying for approval of a Garmin Model 500W series 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.

#### 1.6 Definitions

The following terminology is used within this document:

- 1) AC: Advisory Circular
- 2) ACO: Aircraft Certification Office
- 3) AEG: Aircraft Evaluation Group
- 4) BIT: Built In Test
- 5) CFR: Code of Federal Regulations

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# GARMIN.

6) DER: Designated Engineering Representative

7) FAA: Federal Aviation Administration

8) IAW: In Accordance With

9) ICA: Instructions for Continued Airworthiness

10) MFD: Multi-Function Display unit

11) ODA: Organization Designation Authorization

12) PED: Portable Electronic Device

13) PMI: Primary Manufacturing Inspector

14) POI: Primary Operations Inspector

15) STC: Supplemental Type Certificate

16) TC: Type Certification or Type Certificate

17) TSO: Technical Standard Order

## 2. INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

# 2.1 Introduction

Content, Scope, Purpose and Arrangement: This document identifies the Instructions for

Continued Airworthiness for the modification of the aircraft by installation of the Garmin Models 500W

series GPS/WAAS NAV/COM.

Applicability: Applies to aircraft altered by installation of the

Garmin Models 500W series GPS/WAAS

NAV/COM.

Definition of Abbreviations: See Section 1.6

Precautions: None

Units of measurement: None

Referenced publications: 190-00357-02 Rev. K 500W Series Installation

Manual or later revision

005-C0221-01 Rev. J 500W Series STC Master

Data List or later revision

Retention: This document, or the information contained within,

will be included in the aircraft's permanent records.

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# 2.2 Description of Alteration

The Garmin Model 500W Series GPS/WAAS Nav/Com unit is a 6 ½ inch wide panel mounted unit with all the interface connections behind the instrument panel. Installation of the Garmin Model 500W series GPS/WAAS Nav/Com system interfaces, specific for the aircraft installation, is documented in the GNS 500W Series Post-Installation Checkout Log that is retained as part of the aircraft's permanent records. The 500W series units combine a large number of easily acceptable controls to use the color multi-function display, Nav and Com transceiver, GPS/WAAS navigator in a single unit.

The Flight Stream 210 brings Bluetooth connectivity to the cockpit, allowing portable electronics to stream data to and from the installed avionics.

The Flight Stream 210 interfaces to the GNS 500W via RS-232. The Flight Stream 210 may also interface to the GDL 88 through RS-422 and the GDL 69 through RS-232. The Flight Stream unit is a remote mount LRU that may be located in a variety of places around the aircraft. The suggested locations are in the cabin/cockpit area, or in the forward or aft avionics bay. See Section 3.10 in the 500W Series Installation Manual, 190-00357-02 for suggested locations and mounting information.

# 2.3 Control, Operating Information

See the 500W Series Installation Manual, listed under the reference documentation in paragraph 2.1 of this document, 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 Garmin repair station.

#### 2.5 Periodic Maintenance Instructions

The 500W Series units are designed to detect internal failure. A thorough self-test is executed automatically upon application of power to the units, and built-in test is continuously executed. Detected errors are indicated on the equipment via failure annunciations and maintenance is on-condition.

Operation of the 500W Series unit is not permitted unless an inspection as described in this section has been completed within the preceding 12 calendar months. Conduct a visual inspection on the 500W series unit, its wire harness, and the Flight Stream 210 (if installed) to insure installation integrity:

 Inspect the 500W and Flight Stream units for security of attachment. If the Flight Stream 210 is installed and the screws are not securely attached, tighten any loose Flight Stream 210 mounting screws as necessary to snug plus ¼ turn. If required, re-torque bonding strap hardware for Flight Stream 210 to 12-15 in-lbs.



#### CAUTION

Care should be taken when tightening to the mounting screws of the Flight Stream 210. Excessive tightening may damage the mounting flange.

- 2. Inspect for signs of corrosion.
- 3. Inspect all knobs and buttons for legibility.
- 4. Inspect condition of wiring, shield terminations, routing and attachment/clamping.
- 5. Inspect electrical bonding components. Perform bonding check, if due (see Section 2.5.4).

# 2.5.1 Cleaning the Front Panel

The front bezel, keypad, and 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.

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#### 2.5.2 Display Backlight

The display backlight lamp is rated by the manufacturer as having a usable life of 20,000 hours. This life may be more or less than the rated time depending on the operating conditions of the 500W series unit. 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 the Garmin factory repair station when the backlight lamp requires service.

#### 2.5.3 Battery Replacement

The 500W series has an internal keep-alive battery that will last about 10 years. The battery is used for GPS system information. Regular planned replacement is not necessary. The 500W series will display a 'low battery' message when replacement is required. Once the low battery message is displayed, the battery should be replaced within 1 to 2 months.

If the battery is not replaced and becomes totally discharged, the 500W series unit will remain fully operational, but the GPS signal acquisition time may be increased. This acquisition time can be reduced by entering a new seed position each time the unit is powered on. There is no loss of function or accuracy of the 500W series unit with a dead battery.

The battery must be replaced by the Garmin factory repair station or factory authorized repair station.

### 2.5.4 Bonding Check (IFR-certified aircraft only)

Every 2000 flight hours or ten (10) years, whichever is first, perform an electrical bonding check on the GNS 500W Series Unit and if installed, the Flight Stream 210. If a bonding check was not done during the initial installation, it must be done to support electromagnetic interference and lightning compliance.

#### 2.5.4.1 GNS 500W Series Unit in Metallic or Tube/Fabric Aircraft

Perform an electrical bonding check as follows:

- 1. Remove the 500W unit from the mounting rack.
- 2. Remove the backplate assembly from the rack.
- 3. Measure the resistance between the mounting rack and nearby exposed portion of aircraft metallic structure and verify it is less than 10 milliohms.

In the event of bonding test failure, remove the 500W rack and clean the attachment points with a bonding brush at both the 500W rack and the aircraft and reattach the rack to the rails in the panel. Verify the resistance between the mounting rack and nearby exposed portion of aircraft metallic structure is less than 2.5 milliohms.

4. Reinstall the backplate assembly and reinstall the 500W in the mounting rack.

# 2.5.4.2 GNS 500W Series Unit in Composite Aircraft

Perform an electrical bonding check as follows:

- 1. Remove the 500W unit from the mounting rack.
- 2. Remove the backplate assembly from the rack.
- 3. Measure the resistance between the mounting rack and the instrument panel, verify it is less than 10 milliohms.

In the event of bonding test failure, remove the 500W rack and clean the attachment points with a bonding brush at both the 500W rack and the aircraft and reattach the rack to the rails in the panel. Verify the resistance between the mounting rack and the instrument panel is less than 5 milliohms.

4. Reinstall the backplate assembly and reinstall the 500W in the mounting rack.



# 2.5.4.3 Flight Stream 210 in Metallic or Tube/Fabric Aircraft

- 1. Disconnect the shield terminations from the Flight Stream 210 connector backshell.
- 2. Measure the resistance between the connector and nearby exposed portion of aircraft metallic structure and verify that it is less than or equal to 20 milliohms.

In the event of bonding test failure, remove the Flight Stream 210 connector bonding strap from the aircraft ground plane and clean the attachment point with a bonding brush. Re-attach the bonding strap to the aircraft ground plane, torque to 12-15 in-lbs. Verify the resistance between the Flight Stream 210 connector and aircraft structure is less than or equal to 10 milliohms. If cleaning the far side of the strap is not enough, remove, clean, and re-attach the Flight Stream 210 side.

3. Connect the shield terminations to the Flight Stream 210 connector backshell.

### 2.5.4.4 Flight Stream 210 in Composite Aircraft

- 1. Disconnect the shield terminations from the Flight Stream 210 connector backshell.
- 2. Measure the resistance between the connector and instrument panel (or other aircraft ground) and verify that it is less than or equal to 20 milliohms.

In the event of a bonding test failure, remove the Flight Stream 210 connector bonding strap from the aircraft ground plane and clean the attachment point with a bonding brush. Re-attach the bonding strap to the aircraft ground plane, torque to 12-15 in-lbs. Verify the resistance between the Flight Stream 210 connector and aircraft ground is less than or equal to 10 milliohms. If cleaning the far side of the strap is not enough, remove, clean, and re-attach on the Flight Stream 210 side.

3. Connect the shield terminations to the Flight Stream 210 connector backshell.

# 2.6 Troubleshooting Information

If error indications are displayed on the 500W series unit, consult the Troubleshooting section contained in the 500W Series Installation Manual, listed under reference documentation in paragraph 2.1 of this document. The same troubleshooting section also contains troubleshooting information for the Flight Stream 210. The '500W Series Post-Installation Checkout Log' in the aircraft permanent records includes the configuration information for the installation. (See Section 5 in the 500W Series Installation Manual for a sample Log).

#### 2.7 Removal and Replacement Information

#### 2.7.1 GNS 500W

If the 500W series unit is removed and reinstalled, verify that the 500W series unit power-up self-test sequence is successfully completed and no failure messages are annunciated.

If the 500W series unit is removed for repair and reinstalled, or if the 500W unit is removed and replaced with a different 500W series unit, then follow 'Post Installation Configuration & Checkout Procedures' contained in the 500W Series Installation Manual listed in Section 2.1 of this document, and verify the 500W unit power-up self-test sequence is successfully completed and no failure messages are annunciated.

If any work has been done on the aircraft that could affect the system wiring, antenna cable, or any interconnected equipment, verify the 500W series unit power-up self-test sequence is successfully completed and no failure messages are annunciated.

To remove the 500W series unit from the mounting rack, insert a 3/32-inch hex drive tool into the access hole at the bottom of the unit face. Rotate the hex tool counterclockwise until the unit is forced out about 3/8 inches and can be freely pulled from the rack.

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The 500W unit is installed in the rack by sliding it straight in until it stops, about 1 inch short of the final position. Insert the hex drive tool into the access hole at the bottom of the unit face. Rotate the hex tool clockwise while pressing on the left side of the bezel until the unit is firmly seated in the rack.

Note: There are no special handling requirements for the 500W series units.

#### 2.7.2 Flight Stream 210 (If Installed)

See Figure 1 when performing the following steps:

#### Removal

- 1. Locate and open the BT Link circuit breaker.
- 2. Unscrew the two jackscrews on the Flight Stream 210 connector. Remove connector.
- 3. Remove the four #6 mounting screws to remove the Flight Stream 210.

#### Reinstallation

- 1. Check that the BT Link circuit breaker is open.
- 2. Reinstall the Flight Stream 210 using the four previously removed #6 mounting screws.
- 3. Tighten fasteners until snug, plus an additional 1/4 turn.

Note: Ensure that the Flight Stream 210 is mounted with the arrow pointing in the direction of flight.

- 4. Attach the connector, tightening the two jackscrews.
- 5. Close the BT Link circuit breaker.
- 6. Complete the interface checkout procedures contained in Section 5.5.8 of the 500W Series Installation Manual.

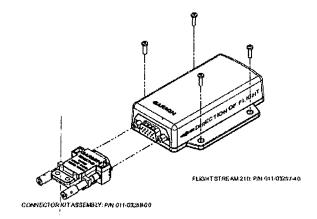


Figure 1. Flight Stream 210 Assembly Overview (Bonding Strap Not Shown)

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# 2.7.3 Flight Stream 210 Bonding Strap

The following removal and replacement steps are provided as guidance for replacing the Flight Stream 210 bonding strap. The bonding strap assembly drawing is shown in Figure 2.

**Note:** Aircraft structure side of bonding strap may be mounted using a nut in lieu of a nut plate. If a nut was used in lieu of a nut plate, further disassembly of the aircraft may be required to gain access to the nut.

#### Removal

- 1. Disconnect one end of the bonding strap from the aircraft ground location.
- 2. Disconnect the other end of the bonding strap from the shield block on the Flight Stream 210 connector backshell.
- 3. Remove the bonding strap.

### Replacement

**Note:** The Flight Stream 210 bonding strap should be as short as practical. When installed, the bonding strap must not loop back on itself.

- 1. Construct a bonding strap no longer than 20" by attaching clean terminal lugs to both ends of clean braid (see Table 1 for parts required).
- 2. Clean the attachment locations with a bonding brush.
- Secure each end of the bonding strap to the previously installed locations. Ensure that the strap
  does not loop back on itself and that the hardware is as shown in Figure 2. The washers must
  seat fully against the aircraft metallic structure without overhang or interference with other
  hardware.
- 4. Using a milliohm meter, verify that the resistance between the connected structure is less than 10 milliohms.
  - In the event of a bonding test failure, remove the bonding strap from the aircraft ground point and clean the attachment points with a bonding brush. Re-install the bonding strap and perform the electrical bonding test in accordance with Section 2.5.4.
- 5. Replace any damaged hardware, otherwise hardware may be reused.

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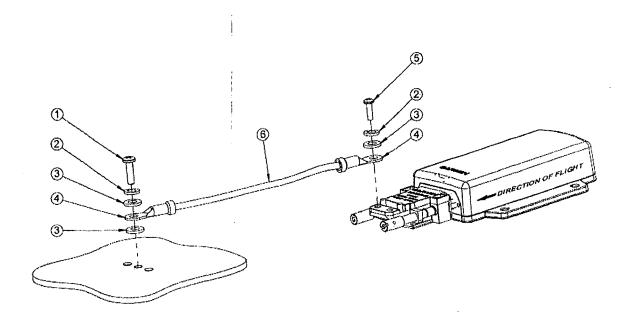


Figure 2. Flight Stream 210 Bonding

Table 1. Flight Stream 210 Bonding Hardware

See Figure 2	Hardware	P/N
1	Screw	MS35206 (AN515) #8 Pan Head Screw
2	Lock Washer	MS35338-42 #8 Lock Washer
3	Flat Washer	NAS1149FN832P (AN960C8) #8 Washer
4	#8 Ring Terminal	MS25036 #8 Ring Terminal
5	Screw	MS51957-42 #6 Screw
6	Braid	QQB575R36T0250 or larger

# 2.8 Diagrams

Refer to the 500W Series Installation Manual (listed under reference documentation in section 2.1 of this document) for drawings applicable to this installation. Point to point wiring diagrams are in Appendix H of the 500W Series Installation Manual. Refer to the GNS 500W Series Post-Installation Checkout Log retained in the aircraft permanent records for a list of the interfaced equipment. The antenna cables are routed between the 500W series unit and the antenna with disconnects at each unit. The antenna cable typically is routed behind interior panels in the fuselage.

# 2.9 Special Inspection Requirements

None, N/A.

# 2.10 Application of Protective Treatments

None, N/A.

# 2.11 Data Relative to Structural Fasteners

None, N/A.

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## 2.12 Special Tools

A milliohm meter with an accuracy of +/- 0.1 milliohms ohms (or better) is required to measure the electrical bonding between the 500W system components and aircraft ground.

No special tools are required for system checkout. See 500W Series Installation Manual listed in reference documentation in section 2.1 of this document.

# 2.13 Additional Instructions

None.

# 2.14 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 500W series unit. If the unit indicates an internal failure, the unit may be removed and replaced. See troubleshooting section contained in the 500W Series Installation Manual, listed under reference documentation in section 2.1 of this document.

#### 2.15 ICA Revision and Distribution

To revise this ICA, Garmin will follow the Garmin ODA Procedures Manual SOP-0055/ACP-0016 for Instructions for Continued Airworthiness. The latest revision of this ICA document is available on the Garmin Dealer Resource Center (<a href="https://www.garmin.com">www.garmin.com</a>). A Garmin Service Bulletin describing ICA revision will be sent to Garmin dealers if a revision is determined to be significant.

#### 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. Garmin customer assistance may be contacted during normal business hours via telephone 913-397-8200 or email from the Garmin web site at www.garmin.com.

# 2.17 Implementation and Record Keeping

Modification of an aircraft by this Supplemental Type Certificate obligates the aircraft operator to include the maintenance information provided by this document in the operator's aircraft maintenance manual and/or the operator's aircraft scheduled maintenance program.

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U.S. Department
of Transportation
Federal Aviation
Administration

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

orm Approved MB No. 2120-0020	Electronic Tracking Number

For FAA Use Only

Administration				-, -		,		,		,		
INSTRUCTI instructions such violation	and dispos	ition o	f this	form.	s. See Title 14 This report is re	CFR §4: equired I	3.9, F by lav	Part 43 Ap w (49 U.S.	pendix B, and A C. §44701). Fai	C 43.9-1 (or lile to report	subseque can resu	ent revision thereof) for ult in a civil penalty for each
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4 41 . 6	USA N600ZE							B-100				
1. Aircraft	Make							Model Se			Serie	s
GRUMMAN												
	1 '			_	on certificate)			Address (As shown on registration certificate) 313 E FLORIDA AVE				
2. Owner								UNION CITY, TN				
							Use Only					
4. Type 5. Unit Identification												
Repair	Alteration	Unit			Make				Model			Serial No.
	X	AIRFRAME		E				(As described in Item 1 above)				
		POW	/ERP	LANT								
		PRO	PELL	.ER								
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Wings Avionics, Inc.								U. S. Certificated Mechanic			Manufacturer C. Certificate No.	
421 Ernest Lancaster Dr.							<b></b>	Foreign Certificated Mechanic  Certificated Repair Station			W1NR105O	
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Extended rang	ge fuel			Signat	ture/Date of Author	rized Indiv	vidual					BRADY N TERRY
per 14 CFR P	art 43				Kul	/		/				19-July-2017
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EAA Form 1	227								-			

#### 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. C	Descri	ption	of '	Work	Accom	plished
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(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)

USA N600ZE Jul-19-2017

Nationality and Registration Mark

Date

- 1. REMOVED A GARMIN GA56 GLOBAL POSITIONING SYSTEM (GPS) ANTENNA (ANT).
- 2. INSTALLED A GARMIN GA35 GPS/WIDE AREA AUGMENTATION SYSTEM (WAAS) ANT.
- 3. THE GARMIN GA35 GPS/WAAS ANT, PART NUMBER (P/N) 013-00235-00, SERIAL NUMBER (S/N) 137677, WAS INSTALLED ON THE TOP FUSELAGE STATION LOCATION VACATED BY THE PREVIOUSLY REMOVED GA56 GPS ANT USING A FACTORY PROVIDED ANT DOUBLER, AND WAS INTERFACED TO THE GARMIN GNS530W GPS INPUT USING THE EXISTING RG400 COAXIAL CABLE ASSEMBLY WITH A BNC TO TNC ADAPTER. INSTALLATION COMPLETED IN ACCORDANCE WITH SUPPLEMENTAL TYPE CERTIFICATE (STC) NUMBER SA02018SE-D, WITH A REISSUE DATE OF 11-28-2011; USING APPROVED MODEL LIST (AML) FOR STC NUMBER STC SA02018SE-D, WITH A REVISED DATE OF 11-28-2011.
- 4. POST-INSTALLATION GROUND CHECKS WERE PERFORMED IN ACCORDANCE WITH THE MANUFACTURER INSTALLATION MANUAL AND FOUND TO OPERATE PROPERLY.
- 5. A LOGBOOK ENTRY UNDER WORK ORDER NUMBER 6645 WAS ENTERED IN THE AIRCRAFT RECORDS. WEIGHT AND BALANCE RECORDS AND EQUIPMENT LIST REVISED.
- 6. FACTORY SUPPLIED GARMIN GPS/XM ANTENNA STC INSTRUCTIONS FOR CONTINUED AIRWORTHINESS, P/N 005-00638-09, REV 3, DATED 03-16-2012, ARE ATTACHED AS ADDITIONAL SHEETS.\*\*\*END\*\*\*

#### United States of America

#### Bevartment of Transportation -- Federal Aviation Administration

# Supplemental Type Certificate

Number SA02018SE-D

This certificate issued to

Garmin International, Inc. 1200 East 151st Street Olathe, KS 66062

certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of Part 23\* of the Federal Aviation Regulations.

Original Product - Type Certificate Number: \*See attached Approved Model List (AML) NO. SA02018SE-D Make: dated November 28, 2011 or later FAA approved revision for list of Model: approved aircraft models and applicable airworthiness regulations.

Description of Type Design Change: Provisions installation of Garmin GPS/XM Antennas in accordance with FAA Approved Model List (AML) SA02018SE-D, dated November 28, 2011, or later FAA approved revision, and FAA Approved GPS/XM Antenna STC Master Drawing List, Document No.: 005-00638-01, Revision "1", approved on January 4, 2011, or later FAA approved revision.

#### Limitations and Conditions:

- 1. Compatibility of this design change with previously approved modifications must be determined by the
- 2. A copy of this certificate must be maintained as part of the permanent records for the modified aircraft.
- 3. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.
- 4. Aircraft modified by this STC must be maintained in accordance with the Instructions for Continued Airworthiness (ICA) listed in the MDL identified above.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: July 22, 2010

January 4, 2011

Date of issuance:

Quele reissued: November 28, 2011

Date amended:

Bu direction of the Administrator

Robert M. Grove **ODA STC Unit Administrator** ODA-240087-CE

Garmin International Joe.

(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

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#### · United States of America

#### Department of Transportation - Federal Aviation Administration

# Supplemental Type Certificate

(Continuation Sheet)

Number SA02018SE-D

Date of Issuance: November 28, 2011

#### \*Certification Basis

Based on 14 CFR §§ 21.115 and 21.101, and the FAA policy for significant changes in FAA Order 8110.48, the certification basis for this change is as follows:

- a. The certification basis for parts not changed or not affected by this change is shown on the attached AML.
- b. The certification basis for parts changed or affected by this change is:

Regulations at the latest amendment: No Amdt through 23-59

Section	Amdt	Section	Amdt
23.251	23-45	23.609	No Amdt
23.301(a)(b)(c)	23-48	23.611	23-48
23.303	No Amdt	23.613(a)	23-45
23.305(a)	23-45	23.867	23-49
23.307(a)	No Amdt	23.1301	23-20
23.571(c)*	23-48	23.1308(a)(b)(c)	23-57
23.573(b)*	23-48	23.1309(a)(1)(b)(1)(e)	23-49
23.603	23-23	23.1431(a)(b)	23-49
23.605(a)	23-23	23.1529	23-26
23.607(a)	23-48		

\*Note: This regulation is not applicable for all aircraft on the AML; please see AML for aircraft that are compliant with this regulation.

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

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# FAA Approved Model List (AML) STC SA02018SE-D

				Market Death		
Aircraft Make (TCDS Holder) [common name or previous make]	Aircraft Model (Alias)	Type Certificate Number	TC Certification Basis *	Document FA. Number appro	Revision (or later FAA approved revision)	AML Revision Date
Cessna (Cessna Aircraft Company)	336	A2CE	CAR 3	005-00638-01	1	01/04/2011 Original
Cessna (Cessna Aircraft Company)	337, 337A, 337B, T337B, 337C, 337E, T337E, T337C, 337D, T337D, 337F, T337F, 337G, T337G, 337H, T337H, T337H-SP	A6CE	CAR 3	005-00638-01	-	01/04/2011 Original
Cessna (Cessna Aircraft Company)	401, 401A, 401B, 402, 402A, 402B, 402C, 411, 411A	A7CE	CAR 3	005-00638-01	<u></u>	01/04/2011 Original
Cessna (Cessna Aircraft Company)	404, 406	A25CE	FAR 23	005-00638-01	,	01/04/2011 Original
Cessna (Cessna Aircraft Company)	T303 (Crusader)	A34CE	FAR 23	005-00638-01	1	01/04/2011 Original
CPAC, Inc. (CPAC, Inc.) [Commander Aircraft Co.]	112, 112TC, 112B, 112TCA, 114, 114A, 114B, 114TC	A12SO	CAR 3	005-00638-01	<u>-</u>	01/04/2011 Original
deHavilland (Viking Air Limited)	DHC-2 Mark I, DHC-2 Mark II, DHC-2 Mark III	A-806	CAR 3	005-00638-01	1	01/04/2011 Original
DORNIER (Dornier-Werke G.m.b.H.)	Do 27 Q-6	A8IN	CAR 3	005-00638-01	1	01/04/2011 Original
DORNIER LUFTFAHRT GmbH (DORNIER LUFTFAHRT GmbH)	Do 28 D, Do 28 D-1, Dornier 228-100, Dornier 228-101, Dornier 228-200, Dornier 228-201, Dornier 228-202, Dornier 228-212	A16EU	FAR 21 FAR 23	005-00638-01	1-	01/04/2011 Original
EADS-PZL "Warszawa-Okęcie" (EADS-PZL "Warszawa-Okęcie" S.A.) [Panstwowe Zaklady Lotnicze]	PZL-104 WILGA 80, PZL-104M·WILGA: 2000, PZL- 104MA WILGA 2000	A55EU	FAR 23	005-00638-01	-	01/04/2011 Original
EADS-PZL "Warszawa-Okęcie" (EADS-PZL "Warszawa-Okęcie" S.A.) [Panstwowe Zaklady Lotnicze]	PZL-KOLIBER 150A, PZL-KOLIBER 160A	A69EU	FAR 23	005-00638-01	1	01/04/2011 Original
Embraer (Empresa Brasileira de Aeronautica S. A.)	EMB-110P1, EMB-110P2	A21SO	FAR 23 FAR 25	005-00638-01	- Second	01/04/2011 Original
Found Aircraft Canada, Inc. (Found Brothers Aviation Limited)	FBA Centennial "100"	A13EA	FAR 23	005-00638-01	1-1	01/04/2011 Original
Found Aircraft Canada, Inc. (Found Aircraft Canada, Inc.)	FBA-2C, FBA-2C1 (Bush Hawk), FBA-2C2 (Bush Hawk XP), FBA-2C3(Expedition E350)	A7EA	CAR 3 FAR 23	005-00638-01	_	01/04/2011 Original
GA8 Airvan (Pty) Ltd (GA 8 Airvan (PTY) Ltd) [Gippsland Aeronautics Pty. Ltd]	GA8	A00011LA	FAR 23	005-00638-01		01/04/2011 Original
Grumman (Grumman American Aviation Corporation)	Grumman G-21, Grumman G-21A	TC 654	Aero 7A	005-00638-01	-	01/04/2011 Original

Issued: January 4, 2011 Revised: November 28, 2011

# GPS/XM<sup>®</sup> Antenna STC Instructions for Continued Airworthiness

as installed in

Grumman G-ZIA

(Make and Model Airplane)

Reg. No. N600ZE

S/N G-21A

Top Fiselage above Cockpit

Document Number 005-00638-09 Rev. 3

Garmin International, Inc. 1200 E. 151st Street Olathe, Kansas 66062 USA

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manufacture or sale of products without written permission.

#### **Record of Revision**

Rev.	Date	Description of Change
1	11/23/10	Initial STC Issuance
2	08/30/11	Add GA 55 and GA 55A XM-only antennas
3	03/16/12	Add Cessna 337 pressurized instructions, update XM to Sirius XM.

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#### 1. INTRODUCTION

#### 1.1 Purpose

This document is designed for use by the installing agency of the antenna models listed in Table 1 below as Instructions for Continued Airworthiness in response to 14 CFR § 23.1529, and Part 23 Appendix G. This ICA includes information required by the operator to adequately maintain the antenna models listed in Table 1 installed under Approved Model List (AML) STC SA02018SE-D.

#### 1.2 Scope

This document identifies the Instructions for Continued Airworthiness for the modification of the aircraft for installation of the antenna models listed in Table 1.

Table 1 - List of Antenna Models

Manufacturer	Antenna Model	Description
Garmin	GA 35	GPS/WAAS Antenna
Garmin	GA 36	GPS/WAAS Antenna
Garmin	GA 37	GPS/WAAS with XM Antenna
Garmin	GA 55	XM Antenna
Garmin	GA 55A	XM Antenna

#### 1.3 Document Control

This document shall be released, archived, and controlled in accordance with Garmin document control system. When this document is revised, refer to Section 2.15 for information on how to gain FAA acceptance or approval and how to notify customers of changes.

#### 1.4 Permission to Use Certain Documents

Permission is granted to any corporation or person applying for approval of the antenna models listed in Table 1 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.

#### 1.5 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) FAA: Federal Aviation Administration
- 6) ICA: Instructions for Continued Airworthiness
- 7) PMI: Primary Manufacturing Inspector
- 8) STC: Supplemental Type Certificate

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#### 2. INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

#### 2.1 Introduction

Content, Scope, Purpose and Arrangement: This document identifies the Instructions for

Continued Airworthiness for the modification of the aircraft by installation of the antenna models listed

in Table 1.

Applicability: Applies to aircraft altered by installation of the

antenna models listed in Table 1.

Definition of Abbreviations: See Section 1.5

Precautions: None

Units of measurement: None

Referenced publications: 190-01284-00 Rev. D Garmin GPS/XM® Antenna

STC Installation Manual

(or later revisions) 005-00638-01 Rev. 4 Master Drawing List, GPS/

XM® Antenna STC

Distribution: This document, or the information contained within,

will be included in the aircraft's permanent records.

#### 2.2 Description of Alteration

Installation of the antenna models listed in Table 1.

#### 2.3 Control, Operating Information

There are no pilot controls or operating information. All pilot controls and operating information is through the interfaced GPS/WAAS and XM receiver unit.

#### 2.4 Servicing Information

The antenna models listed in Table 1 are non-repairable. The antenna must be replaced in the event of failure.

#### 2.5 Periodic Maintenance Instructions

This STC is for physical installation and mounting of the antenna models listed in Table 1 and does not include functional operation. The antenna models listed in Table 1, when interfaced to other receiving equipment, are functionally tested by the interfaced GPS/WAAS and XM receiver.

Operation of the system connected to antenna(s) installed under this STC is not permitted unless the inspections described in this section have been completed within time intervals prescribed in Appendix A.

#### 2.6 Troubleshooting Information

Troubleshooting is performed with the interfaced GPS/WAAS and XM receiver unit.

#### 2.7 Removal and Replacement Information

If the antenna is removed and replaced, verify proper operation by successful completion of the self test or checkout procedure of the interfaced GPS/WAAS and XM receiver equipment, if any.

Note: There are no special handling requirements for the antennas.

#### 2.7.1 Removal

- 1. Verify that the power to the interfaced GPS/WAAS and XM receiver unit is off.
- 2. Disconnect the coaxial antenna connector(s) on the antenna.
- 3. Remove the sealant from the antenna and fuselage.
- 4. Remove the mounting screws on the antenna.
- 5. Retain the screws for reinstallation.
- 6. Remove the antenna.

#### 2.7.2 Installation

- 1. Clean the area of debris or excess sealant.
- Install the antenna according to Section 3.1.1.2 (non-pressurized aircraft) or 3.2.1.2 (pressurized aircraft) of the STC Antenna Installation Manual (listed in Section 2.1 of this document). This includes verifying the electrical bond of the antenna in accordance with the requirements of Section 2.6 in that installation manual.
- 3. Connect the antenna connector(s) to the antenna ensuring each connecter is secured.

#### 2.8 Diagrams

Refer to the STC Antenna Installation Manual (listed under reference documentation in section 2.1 of this document) for drawings applicable to this installation. There are no wiring diagrams since this STC does not provide wiring interconnections. Location of the antenna varies with aircraft and installation. Refer to the cover page of this document for the mounting location of the antenna(s) specific to the aircraft tail number.

#### 2.9 Special Inspection Requirements

#### 2.9.1 Antenna Visual Inspection - Suspected lightning strike

In the event of a suspected or actual lightning strike to the aircraft, the antenna(s) and its associated installation shall be inspected.

If the antenna was struck by lightning then the antenna and the surrounding installation shall be inspected to ensure that there is no structural damage around the areas where lightning may have attached. See Table 2 for inspection criteria.

Execute the system checkout procedure for the GPS/WAAS and/or XM system using the antenna, to ensure the system is operating correctly.

#### 2.10 Application of Protective Treatments

None, N/A.

#### 2.11 Data Relative to Structural Fasteners

For fastener torque information and other fastener information, refer to Section 3.1.1.2 (non-pressurized aircraft) or 3.2.1.2 (pressurized aircraft) of the STC Antenna Installation Manual (listed in Section 2.1 of this document).

#### 2.12 Special Tools

For electrical bonding testing, a milli-ohm meter is required.

#### 2.13 Additional Instructions

There are no additional ICA instructions for this STC.

#### 2.14 Overhaul Period

This STC is for physical installation and mounting of the antenna(s) and does not include functional operation. The antenna(s) do not require overhaul at a specific time period. Antenna health is monitored and self-test conducted by the interfaced GPS/WAAS and XM receivers.

#### 2.15 ICA Revision and Distribution

To revise this ICA, Garmin will follow the Garmin ODA procedures manual SOP-055/ACP-016 for Instructions for Continued Airworthiness.

The latest revision of this document will be available on the Garmin website (<u>www.garmin.com</u>). A Garmin Service Bulletin, describing the ICA revision, will be sent to dealers if revision is determined to be significant.

#### 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. Garmin customer assistance may be contacted during normal business hours via telephone 913-397-8200 or email from the Garmin website at garmin.com.

#### 2.17 Implementation and Record Keeping

Modification of an aircraft by this Supplemental Type Certificate obligates the aircraft operator to include the maintenance information provided by this document in the operator's aircraft maintenance manual and/or operator's aircraft scheduled maintenance program.



#### 3. AIRWORTHINESS LIMITATIONS

There are no additional Airworthiness Limitations as defined in 14 CFR § 23, Appendix G. G23.4 that result from this modification.

#### NOTE

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

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#### **APPENDIX A - AIRCRAFT MAINTENANCE INTERVALS**

Table 2 - Maintenance Intervals

All Aircraft models or	n Approved Model List	
Item	Description/Procedure	Interval
Electrical Bonding Test	<ol> <li>An electrical bonding test must be performed on antennas installed by this STC.</li> <li>Gain access to the antenna installation.</li> <li>Disconnect coaxial cable(s) from the antenna connector(s).</li> <li>Measure the resistance between the antenna connector (TNC external ground) and a nearby exposed portion of conductive aircraft structure (example: exposed rivet on fuselage stringer).</li> <li>Verify the resistance is equal to or less than 10 milliohms.</li> <li>Reconnect the coaxial cable to the antenna connector(s) and ensure it is secured.</li> <li>In the event of bonding test failure, remove antenna, clean and re-install using unit replacement procedures in Section 2.7. Any reworked antenna installation shall have a</li> </ol>	Every 2000 flight hours or ten (10) years, whichever is first
A	resistance less than or equal to 2.5 milliohms.	40.0-1
Antenna Exterior Inspection	<ol> <li>Conduct a visual inspect on the antenna.</li> <li>Clean antenna with water and mild soap.</li> <li>Verify there are no cracks on the antenna and around attachment fasteners.</li> <li>Verify that all sealing fillets around the antenna are in good condition.</li> <li>If the antenna is broken, cracked, or dented it must be replaced.</li> <li>In the event attachment is not secure, re-attach antenna and complete the Electrical Bonding Test.</li> <li>In the event antenna seal shows signs of damage or decomposition, complete the Electrical Bonding Test and reseal antenna.</li> </ol>	12 Calendar Months
Antenna Attachment to Airplane Structure	<ol> <li>Conduct a visual inspect of the aircraft structure supporting antenna installation.</li> <li>Clean exterior of aircraft skin within 10 inch radius from antenna location with water and mild soap.</li> <li>Inspect aircraft skin around antenna footprint to verify there are no cracks and aircraft skin is not deformed.</li> <li>Inspect aircraft skin around rivets attaching antenna doubler and verify there are no cracks originating at the edge of fastener heads. Use high intensity light and, optionally, 5X or 10X magnifying glass.</li> <li>Verify that antenna fasteners are not loose.</li> <li>If the aircraft skin is cracked, or deformed, the aircraft internal structure must also be inspected for degradation in the local area. Refer to approved method defined in Aircraft Structural Repair Manual for aircraft skin repairs.</li> </ol>	12 Calendar Months

#### Pressurized Aircraft models on Approved Model List Hawker Beechcraft Conduct visual inspect of the aircraft structure supporting Every 200 hours B90, C90, C90A, antenna installation at time intervals defined by Maintenance or 12 months. C90GT, 200, 200C, Inspection Program defined in the Aircraft Approved whichever is first B200, B200C model Maintenance Manual<sup>1</sup>. airplanes 1. Clean exterior of aircraft skin within 10 inch radius from antenna location with water and mild soap. 2. Inspect exterior aircraft skin around antenna footprint to verify there are no cracks and aircraft skin is not deformed. 3. Verify that antenna fasteners are not loose. If the aircraft skin is cracked, or deformed, the aircraft internal structure must also be inspected for degradation in the local area. Skin with cracks 0.50 inch or larger must be repaired. Refer to approved method defined in Aircraft Structural Inspection and Repair Manual for aircraft skin repairs. Conduct visual inspect of the aircraft structure supporting 10,000 cycles antenna installation at time intervals defined by Special initial: 1,000 Inspection Program for exterior airframe skin defined in the cycles recurring Aircraft Approved Maintenance Manual<sup>2</sup>. 1. Clean exterior of aircraft skin within 10 inch radius from antenna location with water and mild soap. 2. Inspect exterior aircraft skin around antenna footprint for cracks and deformations. 3. Inspect exterior aircraft skin for cracks around antenna doubler rivets. Use high intensity light and 5X or 10X magnifying glass. 4. Inspect antenna doubler installation for missing fasteners. 5. Verify that antenna fasteners are not loose. If the aircraft skin is cracked, or deformed, the aircraft internal structure must also be inspected for degradation in the local area. Skin with cracks 0.50 inch or larger must be repaired. Refer to approved method defined in 98-39006 King Air Structural Inspection and Maintenance Manual, Chapter 20-10-16 Skin Damage Repair (Pressurized Area). In the event some of the antenna doubler rivets are loose or

missing, install new fasteners. Refer to Appendix B in the 190-01284-00 Garmin GPS and XM® Antenna STC Installation

Manual for fastener type details.

<sup>1</sup> chapter 5-00-00 of 90-590012-13 King Air 90 Series Maintenance Manual, or chapter 5-00-00 of 101-590010-19 King Air 200 Series Maintenance Manual.

<sup>&</sup>lt;sup>2</sup> chapter 5-21-05 or chapter 5-25-05 of 90-590012-13 King Air 90 Series Maintenance Manual, as applicable to aircraft serial number, or chapter 5-20-05 of 101-590010-19 King Air 200 Series Maintenance Manual.

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Pressurized Aircraft models on Approved Model List						
Cessna T337G, P337H, T337H-SP model airplanes	Conduct visual inspect of the aircraft structure supporting antenna installation per procedure and at time intervals defined by Maintenance Inspection Program defined in Section 2 of D2516-8-13 Model 337 Pressurized Series Service Manual (1973 Thru 1980).	Every 200 hours or 12 months, whichever is first				
	<ol> <li>Clean exterior of aircraft skin within 10 inch radius from antenna location with water and mild soap.</li> <li>Inspect exterior aircraft skin around antenna footprint to verify there are no cracks and aircraft skin is not deformed.</li> <li>Verify that antenna fasteners are not loose.</li> </ol>					
	If the aircraft skin is cracked, or deformed, the aircraft internal structure must also be inspected for degradation in the local area. Skin with detectable cracks must be repaired. Refer to approved method and procedures defined in Section 16-18 of of D2516-8-13 <i>Model 337 Pressurized Series Service Manual</i> (1973 Thru 1980).					

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US Department
of Transportation
Federal Aviation
Administration

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

OMB No. 2120-0020 Exp: 5/31/2018	Electronic Tracking Number
	For FAA Use Only

Federal Aviation	on	(Alfiran	ne, Powerplant,	Prop	eller, or App	liance)			
instructions	TONS: Print and dispos on. (49 U.S	ition of this	form. This report is	14 Cl requi	FR §43.9, Part 4 red by law (49 U.	3 Appendix B, an S.C. §44701). Fa	d AC 43.9 silure to rep	-1 (or sub oort can re	osequent revision thereof) for sult in a civil penalty for each
4 Aironala	Nationalit N600ZI		stration Mark			Serial No.	100		
1. Aircraft	Make G	RUM	MAN	AN Model GOO			OSE		G-21
	Name (As	shown on	registration certificat	e)		Address (As sl		gistration o	certificate)
2. Owner	MIKE	RINKEF	INKER AIRCRAFT LLC Address 313 E FLORIDA AVE UNION CITY State T				State TN		
						Zip 38261		Count	ry United States
					3. For FAA Use	Only			
4. Ty <sub>l</sub>	pe				5. Unit Identifica	ation			· · · · · · · · · · · · · · · · · · ·
Repair	Alteration	Unit		Ma	kė		Model		Serial No.
	×	AIRFRAM	E GRUMM	AN		(As described	(As described in Item 1 above)		B-100
		POWERP	LANT						
		PROPELL	.ER						. t
			Туре						
		APPLIANO	Manufacturer	<u>.</u>				•	
			•		O		··		
A. Agency's N	Name and A	ddress			B. Kind of Agend				
Name Justin \	Vright	<del></del>				ated Mechanic		Manu	ufacturer
Address 1186 Mill C	Creek Rd		711		Foreign Cert	ificated Mechanic		C. Certific	cate No.
Zip 38260	Cou	untry United S	States TN		<del>  </del>	Repair Station  Maintenance Organia	zation	A	&P 3084485
have be	en made in	accordance	Iteration made to the e with the requireme rrect to the best of m	nts of	Part 43 of the U.S	n 5 above and des 5. Federal Aviation	cribed on t Regulation	he reverse ns and tha	e or attachments hereto t the information
Extended ran per 14 CFR F App. B			Signature/Date of A	uthoriz	zed Individual	Po	3	30-1	7
			6	7. Ap	proval for Return				
Pursuant to Administrat	o the author	ority given deral Aviatio		below,	the unit identif		as inspect		manner prescribed by the
Ins	A Flt. Stand spector	ards	Manufacturer		Maintenance O	rganization		ns Approve tment of Tra	d by Canadian ansport
BY FA	A Designee		Repair Station	X	Inspection Auth	orization	Other (Spec	cify)	
Certificate or Designation N	10. 20 /KI	1	Signature/Date of A	uthoriz <i>Osc</i>	red Individual	lema.	3/30/	2017	

#### 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 national sheets.	onality and registration mark and date	e work completed.)
	N600ZE	2/20/47
	Nationality and Registration Mark	3/28/17 Date
Installed two Airwolf oil filter kits AFC-K015 at station Kits were installed per STC SA01282NY and Airwolf I revision C dated 11/11/2010. Kits weigh 9.5 lbs each. new. All work was done in accordance with AC43.13-installation manual.	Filter Corp. installation m All AN fittings and hard	nanual ware are
Weight & Balance and Equipment List have been upd	ated.	
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Additional Sheets	Are Attached	

#### United States of America

#### Bepartment of Transportation -- Hederal Abiation Administration

# Supplemental Type Certificate

Number SA01282NY

This certificate issued to

Airwolf Filter Corp 15369 Madison Rd. Middlefield, OH 44062

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part \* of the \* Regulations.

Original Product - Type Certificate Number:

\* See attached FAA Approved Model List (AML)

\* No. SA01282NY for list of approved airplane models

\* and applicable installation instructions

Description of Type Design Change:

Installation of Airwolf remote mounted engine oil filter kit AFC-K015 on aircraft powered by Pratt & Whitney radial reciprocating engine Series R-985, R-1340 and R-1830.

#### Limitations and Conditions:

- 1. Airwolf Oil Filter Model AFC-600 (Champion) is eligible only with R-985 series engines.
- 2. Airwolf Oil Filter Model AFC-700 (Fram) is eligible on R-985, R-1340 and R-1830 series engines.
- 3. Airwolf Instructions for Continued Airworthiness, AFC-K000-ICA, revision IR, dated July 5, 2012 or later FAA accepted revision is required with this installation.
- 4. Engine compartment firewall for mounting oil filter shall be of .021 inch minimum thickness ASTM A527 galvanized steel or equivalent (Ref. CAR 3.624(b), 14CFR PART 23.1191(h)).
- 5. Compatibility of this design change with previously approved modifications must be determined by the installer.
- 6. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

This certificate and the supporting data which is the basis for approval shall remain in effect until succendered, suspended, recoked or a termination date is otherwise established by the Administrator of the Tederal Axiation Administration.

July of application . September 01, 1999

Fale of issunner :

January 23, 2001

Late reissued

Fate anended: October 31, 2012

By direction of the Administrator

Timothy Smyth

Manager, Propulsion & Program Management Branch

Chicago Aircraft Certification Office

(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

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US Department
of Transportation
Federal Aviation
Administration

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

1		For FAA Use Only
	OMB No. 2120-0020 Exp: 5/31/2018	Electronic Tracking Number

Administration	n											
INSTRUCTI instructions such violation	and dispos	ition of this	form. This report	e 14 CI is requi	R	§43.9, Part 43 by law (49 U.	3 Appendix B, at S.C. §44701). F	nd A ailure	C 43.9 e to rep	-1 (or sub ort can re	sequent revision thereof) for sult in a civil penalty for each	
•	Nationality and Registration Mark N600ZE						Serial No. B-	10	0			
1. Aircraft	Make G	RUM	MAN	ΛΑΝ				O:	SE	1	G-21	
Name (As shown on registration certificate)							Address (As s			gistration (	certificate)	
2. Owner	MIKE	RINKE	LLC			City UNION	CITY		State TN			
Zip 38261 Country United State  3. For FAA Use Only											ry United States	
					<u> </u>	1011101	<u> </u>					
4 Trees		ı			_	Unit Identifica	40-			<del></del>		
4. Typ Repair	Alteration	Uni	<u> </u>	Ma		Unit Identifica	iuon	Mod	del		Serial No.	
, topan		AIRFRAM	GRUM				(As describe			above)	B-100	
	<b>x</b> .	AIRFRAIN	<u> </u>	(75 described in Nam 7 above)								
		POWERF	PLANT	T					·			
		PROPEL	LER	ER								
			Туре									
		APPLIAN	CE Manufacturer	Manufacturer								
A. Agency's N	lama and A	ddronn		6		onformity Sta						
					X	. Kind of Agend	y ated Mechanic			Mon	ufacturer	
Name Justin Wright Address 1186 Mill Croek Rd						`					cate No.	
City Troy			State TN		┝	Certificated Repair Station					cate 110.	
Zip 38260 Country United States						<del>                                     </del>	Certificated Maintenance Organization A&P 3					
have be	en made in	accordance	alteration made to the with the requirement to the best of	ents of	Par	rt 43 of the U.S	5 above and de Federal Aviation	scrib n Re	ed on t gulation	he reverse ns and tha	e or attachments hereto t the information	
Extended rang			Signature/Date of	Authoria	zed	Individual						
per 14 CFR Pa App. B	art 43		June		M	retto			3	-30	-/7	
				7. Ap	pro	val for Return	to Service				· · · · · · · · · · · · · · · · · · ·	
Pursuant to Administrate	the author of the Fed	ority given deral Aviati	persons specified on Administration a	l below nd is	ti		ed in item 5 v		inspect Rejecte		manner prescribed by the	
1 1	A Flt. Stand pector	lards	Manufacturer		М	Maintenance Or	enance Organization			Persons Approved by Canadian Department of Transport		
1 1	A Designee		Repair Station	X	Ir	nspection Auth	orization	Othe	er (Spe	cify)		
Certificate or Designation No	_		Signature/Date of	Authori:	zed	Individual House			2/	30/20	5/7	
327180	20 IK		( foffice,	rolle l	EA(	House	na			cojac	71	

#### 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.

	N600ZE	3/28/17
	Nationality and Registration	Mark Date
stalled two JPI EDM-700 scanners at station 9 stalled per STC SA2586NM and JPI Instrumer ted 01/13/99. SN: 35663 for left engine and S12 lbs each. Installed probes for EGT and CHI JPI installation manual. Units were wired to the otected by an 5 amp breaker. All work was do d JPI installation manual. eight & Balance and Equipment List have been	nts installation manual for N: 38651 for right engin T on each engine where he aircrafts Avionics bus ne in accordance with A	r EGT-701 e. Kits weigh prescribed and each
	END	
	tom in	
		• . •

#### United States Of America

Bepartment of Transportation - Federal Abiation Administration

## Supplemental Type Certificate

Number SA2586NM

This Cortificate issued to

J. P. INSTRUMENTS

PO Box 7033 Huntington Beach, CA 92646

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airporthiness regainments of Part 3 of the Civil Aviation Regulations, including respective Amendments as specified in the attached Approved Model Bist.

Criginal Product Topse Certificate Number:

- \* \*See attached FAA Approved J.P. Instruments
- Maka
- \* Master Eligibility List No. SA2586NM for list
- Abodel:
- \* of approved aircraft models and applicable TCDS

Description of Type Design Change:

Installation of J. P. Instruments temperature monitoring systems in accordance with FAA Approved J. P. Instruments Drawing List Report No. 100, Revision D, dated December 19, 1996, or later FAA approved revisions. FAA Approved Airplane/Rotorcraft Flight Manual Supplement No. 1 for EGT-701 temperature indicator, Revision A, dated December 13, 1996, or later FAA approved revisions.

Einitations and Conditions. The approval of the change in type design applies to the basic airplane of the specific models that are otherwise unmodified. This approval should not be extended to other specific airplanes of these models on which other previously approved modifications are incorporated, unless it is determined that the interrelationship between this installation and any previously approved configuration will not introduce any adverse effect upon the airworthiness of that airplane. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission. (See continuation sheet)

This certificate and the supporting data which is the basis for approval shall remain in offect until surrendered, suspended, recoved or a termination date is otherwise established by the Administrator

of the Federal Aniation Administration.

Date of application . December 31, 1984

Date of issuance:

August 14, 1985



Date reissued .

Take amended: July 13, 1987, November 13, 1992, December 19, 1996, May 15, 1998, June 17, 1999

By direction of the Administrator

(Signature)
Manager, Propulsion Branch

Los Angeles Aircraft Certification Office

(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both

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U.S Depar Transports	
Federal A Administr	viation

1. Aircraft

Nationality and Registration Mark

N600ZE

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

	Form Approve OMB No. 2120 11/30/2007	d	
1	OMB No. 2120	<b>+002</b>	0
1	11/30/2007		-

**Electronic Tracking Number** 

For FAA Use Only

Series

G-21A

INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 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. 1421). Failure to report can result in a civil penalty not to exceed \$1,000 for each such violation (Section 901 Federal Aviation Act 1958)

Serial No.

GOOSE

B-100

Model

Name (As shown on registration certificate)					A	Address (As shown on registration certificate)					
2. Owner		William R. Rose						Address 15 S. Mundhank Road			
								CitySO Barrington State IL			
							z	тр <u>60010</u>	<u> </u>	ountry <u>USA</u>	
	3. For FAA Use Only										
										•	
	<u></u>										
4. Type 5. Unit identification											
Repair	Alteration	Unit		Make				Model		Serial Number	
	×	AIRFRAME						(As described in Item 1	above)		
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		POWERPLAN	т				.	<b>.</b>		-	
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				Manufacturer							
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	r Serrano		•		B. K	·	ertificated I	Mechanic		Manufacturer	
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zp61108	· ·	CountryUSA	_			Certificated Maintenance Organization					
D. Loodi	ly that the rec	air and/or alteratio	n made to f	he unit(s) i	dentifi	ed in ite	m 5 above	and described on the rev	erse or	attachments hereto	
have	been made in	accordance with the true and correct to	the requirer	nents of Pa	ert 43 (	of the U	.S. Federal	Aviation Regulations and	i that th	e information	
Extended ra		See and context (	Signature/			ed Indivi	dual				
per 14 CFR	Part 43	$\Box$	Victor S		. – 	<u> </u>				Intralace	
Арр. В					<u>/</u>	22	w	1/mas	Z.	10/30/2007	
	to the	h. air	nonifical fact					to Service inspected in the manner	Otherni	bed by the	
Pursuant Administr	to the authoric rator of the Fe	ty given persons special Aviation Adm	pecined del ninistration :	and is	AF	ered in	D R	INSPECTED	present		
nu l	FAA Fit Sta	FAA Fit Standards Man		er <b>M</b> aintei		enance Org	e Organization		Person Approved by Canadian Department of Transport		
ВУ	1	FAA Designee Repair S		ion	X Inspection Authorization			rization	Other	(Specify)	
Certificate		Signa	ture/Date o	Authorize	d Indiv	ridual					
Designation A&P 307			or Serran			20	len	Ulma	ent.	10/30/2007	
FAA Fo	rm 337 (10-	-08)					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<u> </u>			

#### 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 confinued conformity with the applicable airworthiness requirements.

	Additional Sheets Are Attached
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	CN2
	South St. Paul, MN 55075
	beon solving thou 004
	C Holder: Lake & Air Inc.
	ipment list updated - Weight & Balance performed and updated as required.
	(E & AIR - AMPHIBIAN LANDING GEAR POSITION ADVISORY SYSTEM STC ★: SA39CH
	oort Date: 23 July, 1992 vision Date: 09 June, 2004
	At-009e :# hoc
3 <b>3</b> CH	MPLIED WITH AND PERFORMED THE FOLLOWING STC AS PER INSTALLATIION MANUAL: STC #SA:
eds ()	Nationality and Registration Mark
10/30/2007	3Z009N
	(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and da
( hatalamon show ate	Description of Work Accomplished

### Mnited States of America

### Bepartment of Transportation — Federal Abiation Administration

## Supplemental Type Certificate

Number SA39CH

This corlificate issued to

Lake & Air Inc. 400 North Airport Service Road South St. Paul, MN 55075

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airporthiness requirements of Part \* of the \* Populations. \*

Original Product - Type Cartificato Nambon: \*

\* See attached FAA Approved Model List (AML) No. SA39CH for list of approved airpiane models and applicable airworthiness regulations.

Model . \*

Description of Type Design Change.

Installation of an Amphibian Landing Gear Position Advisory System in accordance with Lake & Air, Inc. Installation Manual as listed on AML No. SA39CH, or later FAA approved revision.

1) Compatibility of this design change with previously approved modifications must be determined by the installer .

2) A copy of this certificate and FAA Approved Model List (AML) No. SA39CH issued April 21, 1993, or later FAA approved revision, must be maintained as part of the permanent records for the modified aircraft.

This cortificals and the supporting data which is the basis for approval shall remain in effect until sarrondored, saspondod, revoked or a termination date is otherwise established by the Administrator of the Federal Sociation Solministration

Dals of application: March 02, 1993

Dalo of issuance : April 21, 1993

Dalo roissuod :

Dalo amended . January 31, 1994; January 17, 1996; July 02, 1997

Charles L. Smalley

Manager, Systems & Flight Test Branch Chicago Aircraft Certification Office

(Title)

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

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

Electronic Tracking Number

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Adminis									·	:	GLO3		
and	disposition	of this f	orm. This	геро		by law (49	U.S.C		43.9-1 (or subsequer o report can result in a				
Nationality and Registration Mark N600ZE  Nationality and Registration Mark							Serial No. B-100						
., ,		Make GRUMMAN AMERICAN							Model Series G-21A				
		Name (			gistration cert	ificate)			Address (As shown o	n registratio	n certificate)		
2. Own	er	l	WILLIA	VM F	R. ROSE				Address 15 V	V. MUND	HANK RD.		
;		ł							CitySOUTH	BARRING	STON State ILL		
····									Zip 60010 Country USA				
							3	. For FAA Use O	nly	<del></del>			
<u></u>													
	4. Type							5. U	nit Identification				
Repa	uir Afte	eration	ļ <u>.</u>	Un	ii			Aake ——————	Model		Serial Number		
			AIRFRAME						(As described in Item 1 above)				
		Ø	POWER	RPLA	INT	PRATT & WHITNEY A/C		WHITNEY	R-983 AN-14B		24009		
			PROPE	LLEF	₹								
			APPLIA	NCE		Type Manufacturer					·		
							6.	. Conformity Stat	ement				
A. Ager	ncy's Name	e and Ad	dress				B. K	ind of Agency					
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Address_			KE DRI	<u>VE</u>				Foreign Certificat	ed Mechanic	C. C	ertificate No.		
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Ζiφ	6110	<u>)8</u>	Country	<u>US</u>	<u> </u>		0	Certificated Main	tenance Organization				
h	ave been r	made in a	accordanc	e wit	ion made to th h the requirem to the best of	ents of Pa	irt 43 (	ed in item 5 above of the U.S. Federa	and described on the Aviation Regulations	reverse or a and that the	ttachments hereto information		
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BY		Fit Standector	dards		Manufacture			Maintenance Org	anization	_11'	Person Approved by Canadian Department of Transport		
	FAA	Designe	e		Repair Statio	n	Х	X Inspection Authorization		Other (	Specify)		
Certifica				Sign	ature/Date of	Authorized	Indiv			_			
	ation No. &P3076	A1888			VICTOR S	ERRAN	10	//-	1	-			

Description of Work Accomplished			
(If more space is required, attach additional sheets. Ide	entify with aircraft nationality and registrat	ion mark and d	late work completed.)
	N600ZE		6/16/2007
	Nationality and Registration Mark		Date
·			
Complied with STC: 5141NM [SOL Company] as per ins	structions.		
?] Installation of "BLOWPROOF" exhaust gaskets.			
B] Gaskets installed as per STC supplied instructions.	•		
I) No servicing required.			
Recommended service lifte 1600 hours.			
6] No special instructions.			
7] Replacement recommended at 1600 hours.			
8] N/A		, .	
9] N/A			
10] N/A			
11] Torque retention nuts to 15-20 ft/lbs.			
12] N/A			•
13] N/A			
14] N/A	•		
5] No change to weight and balance			•
STC Hol	der: SOL Company		
	571 Winslow Way West		
•	Bainbridge Island, WA 98110		
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## **MAJOR REPAIR AND ALTERATION**

Form Approved OMB No. 2120-0020	
For FAA Use Only	

(Airframe, Powerplant, Propeller, or Appliance) Office Identification DICS INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 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. 1421). Failure to report can result in a civil penalty not to exceed \$1,000 for each such violation (Section 901 Federal Aviation Act 1958) Make G-21A Grumman 1. Aircraft Serial No. Nationality and Registration Mark B-100 N 600ZE Address (As shown on registration certificate) Name (As shown on registration certificate) 2 Owner William R. Rose 15 S. Mundhank Road South Barrington, IL 60010 3. For FAA Use Only The data identified herein complies with the applicable airworthiness requirements and is approved for the above described aircraft, subject to conformity inspection by a person authorized in FAR 43.71. 7-19-2005 Date FAA Inspector, DPA-FSDO 4. Unit Identification 5. Type Maka Unit Model Serial No. Repair Alteration 冈 (As described in item 1 above)~ AIRFRAME П **POWERPLANT** PROPELLER Туре APPLIANCE Manufacturer 6. Conformity Statement C. Certificate No. A. Agency's Name and Address B. Kind of Agency U.S. Certified Mechanic NF2R029L J.A. Air Center **DuPage Airport** Foreign Certified Mechanic Rating: Radio Certified Repair Station West Chicago, IL 60185 Class 1,2,3 Manufacturer D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 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 herein is true and correct to the best of my knowledge. Signature of Authorized Individual 19 July 2005 Steven J. Carton 7. Approval for Return to Service Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the APPROVED REJECTED Administrator of the Federal Aviation Administration and is Other (Specify) FAA Fit Standards Manufacturer Inspection Authorization Repair Station FAA Designee Person Approved by Transport Canada Airworthiness Group  $\boxtimes$ Date of Approval or Rejection Certificate or Signature of Authorized Individual Designation No.

David I.L. Bruhn

FAA Form 337 (12-88)

20 July 2005

NF2RO29L

8.	Description of Work Accomplished
	(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)
Gru	mman G-21A (Goose)
N 6	00ZE
inst to S	alled Garmin GDL-69 Data Link Receiver in accordance with Installation Manual #190-00355-02 Revision B dated February 2005, with reference
The	Garmin GDL-69 provides weather information to the Garmin GNS-530 GPS/Nav/Comm/GS/Map.
Ins	talled Garmin GA-55 Data Link Antenna at fuselage station 109.00" aft of datum on the top fuselage.
The	Garmin GDL-69 uses a 5 amp circuit breaker located in the avionics bus area.
Thi	s equipment has been ground checked and functions properly. There were no adverse effects with any of the other aircraft systems.
All	work was done in accordance with AC43.13-18 Chapters 10, 11, 12 and AC43.13-2A Chapters 1, 2, 3.
No See	additional maintenance due beyond the requirements of 14 CFR, Part 91, Subpart E ("Maintenance, Preventive Maintenance And Alterations").  attached checklist for Continued Airworthiness.
We	ight & Balance and Equipment List have been updated.
	end

8.	Description of Work Accomplished
	(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)
	Grumman G-21A N 600ZE 19 July 2005
IN	STRUCTIONS FOR CONTINUED AIRWORTHINESS CHECKLIST
1	. INTRODUCTION: See block #4 of Form 337.
2	. DESCRIPTION: See block #8 of Form 337.
3	. CONTROL/OPERATION INFORMATION: Operating Manual has been included in aircraft paperwork.
4	SERVICING INFORMATION: Not applicable.
5	MAINTENANCE INSTRUCTIONS: Not applicable.
٩	5. TROUBLESHOOTING INFORMATION: Not applicable.
1	7. REMOVAL AND REPLACEMENT INFORMATION: Weight & Balance was calculated. Equipment List was updated.
١	3. DIAGRAMS: Not applicable.
	9. SPECIAL INSPECTION REQUIREMENTS: Not applicable.
	0. APPLICATION OF PROTECTIVE TREATMENTS: Not applicable.
1	1. DATA (STRUCTURAL FASTENERS, INSTALLATION REQUIREMENTS): Not applicable.
	12. LIST OF SPECIAL TOOLS: Not applicable.
	13. COMMUTER CATEGORY AIRCRAFT: Not applicable.
	14. RECOMMENDED OVERHAUL PERIODS: Not applicable.
	15. AIRWORTHINESS LIMITATION SECTION: No additional airworthiness limitations.
	16. REVISION: Should a revision of this ICA become necessary, a letter will be submitted to the local FSDO with a copy of the revised FAA Form 337 and revised ICA.
	Additional Sheets Are Attached

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U.S Department of Transportation (Airframe Powers)						IR AND ALTERATION				Form Approved OMB No. 2120-0020				
Federal Aviation Administration	(Airframe, Powerplant, Propeller, or Appliance)							ı			Vse On			
INSTRUCTIONS: Print or type all entiries. See FAR 43.9, FAR 43.4								* **	mas	٠.,	Office Identific			
iNSTRUCTI and disposit for each suc	TIONS: Print or type all ition of this form. This is the violation (Section 90)	entrie report 01 Fec	is. See FAR 43.9, is required by law deral Aviation Act 1	FAR 43 Ap (49 U.S.C. (958)	pen 142	ndî: 21)	x B, and AC 43.9-1 ). Failure to report a	(or subsequent in	uent revision there	of) for i	nstructions and \$1,000	- Cil	.03	Nes
1. Aircraft	Make Grumman							Model G-21A	· · · · · · · · · · · · · · · · · · ·			· ·	<u>.                                  </u>	
	Serial No. B-100								lity and Registration	n Mark		· · · · · · · · · · · ·		
2. Owner	Name (As showr William R. Re	ose	egistration certifica	ite)		_		SO Ba	(As shown on regi Mundhank Roa mington, IL 60	ad	n certificate)			
approv subjec		ove cy ins	described all spection by a	ircraft, a persor	is n	2	3. For FAA Use						** ,	v
Unit	T	Make	<u> </u>	T	<u> </u>	<u> </u>		tion	· · · · · · · · · · · · · · · · · · ·			5. Ty	ре	٠.
	·	Make Model					Serial I	No.	F	Repair	Alteration			
NRFRAME				~(As de	:sc	:ri	ibed in item 1 a	1bove)~					·	×
OWERPLANT	e i .						·					10		
ROPELLER												10	<u>·</u>	
PLIANCE	Туре			 		_				<del></del>				
	Manufacturer				-	_								
Agency's Name	and Address				T.		6. Conformity Stat	ement						
A.Air Center					B.		Gnd of Agency				Certificate No			
uPage Airport	Ł.			1	屵	_	U.S. Certified Mech Foreign Certified M			N	NF2R029L			
est Chicago, IL 60185					P	\$	Cortified Repair Station Rating: Radio Class 1,					, 2, 3		
D. I certify that the have been me herein is true	he repair and/or alterationade in accordance with and correct to the bes	on ma In the st of n	ide to the unit(s) id requirements of Pr ry knowledge.	lentified in it art 43 of the	tem U.S	1 4 S	above and describe Federal Aviation Re	d on the re guiations a	verse or attachmer and that the informa	nts hen	eto nished			<del>-</del>
October 200						_	Signature of Authoriz			10	/	7	. ·	
OCIODE: 200	3				-	ļ			ian /			<del></del>		
					-	Δ.	Steven J. Carto proval for Return t		1	1/	1	0	٠.	
ursuant to the au	uthority given persons a	specif	led below, the unit	identified in	n ite	<u>*</u>	4 was inspected in	o Service		_				
dministrator of the	ne Federal Aviation Adm	ninistr	ation and is	APPRO1	NEC	D	REJECTE	ле пълце О	prescribed by the					
	Fit Standards ector		Manufacturer	11	己	tr	Spection Authorizati		10	Other (	Specify)		<del></del>	·

Person Approved by Transport Canada Airworthiness Group

Signature of Authorized Individual

Steven J. Carton

27 October 2003 FAA Form 337 (12-88) ....

Date of Approval or Rejection

Repair Station

Certificate or Designation No.

NF2R029L

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	N				

	f Work Accomplis						
" (If more space	is required, attach	additional sheets	s. Identify with aircra				
1			s. Identity with aircraf	t nationality and re	gistration mark ar	nd date work d	Completed )
Grumman G-21A (	(Goose)	•	,				
N 600ZE	,00000,		:				
1		•	•	•			
Installed Garmin Gi December 2002, w	NS-530 GPS/Nav/oith reference to ST	Comm/GS/Map i C #SA00864WI.	n accordance with Ga	ırmin 500 Series In	nstallation Manual	#190-00181-0	2 Revision F date
Installation has bee	n done using steeri	ing information to	the #1 Nav Indicator	(Rendiv/Vina VI sa	254 1100	•	• .
1				(Oction Mild M-32	23A HSI) interface	d to S-TEC 60	0-2 Autopilot.
Lightning strike data display pages of the	detected by the G GNS-530.	oodrich WX-500	Stormscope Weathe	r Mapping System	will appear on the	moving map	and weather
l .							
Traffic data detecte	d by the Goodrich :	Skywatch Traffic	Advisory System will	2000.000 #-			
l			Advisory System will	ahhear ou rue won	ving map and traffi	ic display page	es of the GNS-530
Garmin GA-56 GPS	Antenna has heen	inetallad at £ 1	lage station 49.00" aft				
of TSO-C129.		· a rataliett at itisel	lage station 49.00" aft	t of datum on the to	op fuselage. This	antenna meet	the remines
			· : .		•		~ are requirement
The Garmin GNS-51	30 IRPS two 121 E =		•	•		•	
	www (Z) 3 8	rrip circuit breake	ers located in the avior	nics bus area.			
	,	o, 121.200, 121.	225, 121.250, 131. <u>2</u> 0	0, 131.225, 131.25	50, 131 <i>.</i> 275, 131.3	300, 131.325	and 131,350 MHz
Garmin GNS-530 is a accordance with AC2 "GPS NOT APPROVED FAA Approved Flight This equipment has been dor Class A(1), and TSO-lo additional maintenation.	approved for VFR/I 20-138 has been or /ED FOR NAVIGA: Manual Supplement een ground checke we in accordance we C37d Class 4 & 6,	IFR enroute terminompleted (date_TION PURPOSE and dated_TION PURPOSE and dated_TION PURPOSE and dated_TION PURPOSE and TSO-C38d (dated_TSO-C38d (dated_TSO-C38	inal and non-precision  27 Oct 2003  S" placard has been  27 21, 2003  is re  properly. There were  Chapters 10, 11 & 12,  Class C & E, and TSC	approach operation  JA Representate removed.  equired for this appure and adverse effects and AC43.13-2A (0)-C40c, and TSO-C	on when successfitive <u>Victor</u> proval.  Swith any of the of Chapters 2 & 3, as C36e, and TSO-C	ul check flight ther aircraft sy and AC20-138,	conducted in and the stems.
FAA Approved Flight This equipment has be All work has been dor Class A(1), and TSO- No additional mainten. See attached checklis	approved for VFR/I 20-138 has been co /ED FOR NAVIGA: Manual Supplement een ground checke he in accordance w C37d Class 4 & 6, ance due beyond the	IFR enroute terminompleted (date_TION PURPOSE at dated Octobe at and functions part of the AC43.13-18 (and TSO-C38d (dated)).	inal and non-precision  27 Oct 2003  S" placard has been  er 21, 2003  is re  properly. There were  Chapters 10, 11 & 12,  Class C & E, and TSC  of 14CFR, Part 91, Sc  of 14CFR, Part 91, Sc	approach operation  JA Representate Termoved.  Equired for this appure and adverse effects and AC43.13-2A (C)-C40c, and TSO-C	on when successfitive <u>Victor</u> proval.  Swith any of the of Chapters 2 & 3, as C36e, and TSO-C	ul check flight ther aircraft sy and AC20-138,	conducted in and the stems.
Garmin GNS-530 is a accordance with AC2 "GPS NOT APPROVED FAA Approved Flight This equipment has been dorn Class A(1), and TSO-do additional maintenates attached checklisters.	approved for VFR/I 20-138 has been co /ED FOR NAVIGA: Manual Supplement een ground checke he in accordance w C37d Class 4 & 6, ance due beyond the	IFR enroute terminompleted (date_TION PURPOSE at dated Octobe at and functions part of the AC43.13-18 (and TSO-C38d (dated)).	inal and non-precision  27 Oct 2003  S" placard has been  er 21, 2003  is re  properly. There were  Chapters 10, 11 & 12,  Class C & E, and TSC  of 14CFR, Part 91, Sc  of 14CFR, Part 91, Sc	approach operation  JA Representate removed.  equired for this appure and adverse effects and AC43.13-2A (0)-C40c, and TSO-C	on when successfitive <u>Victor</u> proval.  Swith any of the of Chapters 2 & 3, as C36e, and TSO-C	ul check flight ther aircraft sy and AC20-138,	conducted in and the stems.
Garmin GNS-530 is a accordance with AC2 "GPS NOT APPROV FAA Approved Flight This equipment has been dor class A(1), and TSO- to additional maintenace attached checkliss	approved for VFR/I 20-138 has been co /ED FOR NAVIGA: Manual Supplement een ground checke he in accordance w C37d Class 4 & 6, ance due beyond the	IFR enroute terminompleted (date_TION PURPOSE at dated Octobe at and functions part of the AC43.13-18 (and TSO-C38d (dated)).	inal and non-precision  27 Oct 2003  S" placard has been  er 21, 2003  is re  properly. There were  Chapters 10, 11 & 12,  Class C & E, and TSC  of 14CFR, Part 91, Sc  of 14CFR, Part 91, Sc	approach operation  JA Representate removed.  equired for this appure and adverse effects and AC43.13-2A (0)-C40c, and TSO-C	on when successfitive <u>Victor</u> proval.  Swith any of the of Chapters 2 & 3, as C36e, and TSO-C	ul check flight ther aircraft sy and AC20-138,	conducted in and the stems.
Garmin GNS-530 is a accordance with AC2 "GPS NOT APPROV  FAA Approved Flight  This equipment has b  VI work has been dor  Class A(1), and TSO-  do additional maintenate attached checklis	approved for VFR/I 20-138 has been co /ED FOR NAVIGA: Manual Supplement een ground checke he in accordance w C37d Class 4 & 6, ance due beyond the	IFR enroute terminompleted (date_TION PURPOSE at dated Octobe at and functions part of the AC43.13-18 (and TSO-C38d (dated)).	inal and non-precision  27 Oct 2003  S" placard has been  er 21, 2003  is re  properly. There were  Chapters 10, 11 & 12,  Class C & E, and TSC  of 14CFR, Part 91, Sc  of 14CFR, Part 91, Sc	approach operation  JA Representate removed.  equired for this appure and adverse effects and AC43.13-2A (0)-C40c, and TSO-C	on when successfitive <u>Victor</u> proval.  Swith any of the of Chapters 2 & 3, as C36e, and TSO-C	ul check flight ther aircraft sy and AC20-138,	conducted in and the stems.
Garmin GNS-530 is a accordance with AC2 "GPS NOT APPROV  FAA Approved Flight  This equipment has b  VI work has been dor  Class A(1), and TSO-  do additional maintenate attached checklis	approved for VFR/I 20-138 has been co /ED FOR NAVIGA: Manual Supplement een ground checke he in accordance w C37d Class 4 & 6, ance due beyond the	IFR enroute terminompleted (date_TION PURPOSE at dated Octobe at and functions part of the AC43.13-18 (and TSO-C38d (dated)).	inal and non-precision  27 Oct 2003  S" placard has been  er 21, 2003  is re  properly. There were  Chapters 10, 11 & 12,  Class C & E, and TSC  of 14CFR, Part 91, Se  ed.	approach operation  JA Representate removed.  equired for this appure and adverse effects and AC43.13-2A (0)-C40c, and TSO-C	on when successfitive <u>Victor</u> proval.  Swith any of the of Chapters 2 & 3, as C36e, and TSO-C	ul check flight ther aircraft sy and AC20-138,	conducted in and the stems.
Garmin GNS-530 is a accordance with AC2 "GPS NOT APPROV FAA Approved Flight This equipment has been dor class A(1), and TSO- to additional maintenace attached checkliss	approved for VFR/I 20-138 has been co /ED FOR NAVIGA: Manual Supplement een ground checke he in accordance w C37d Class 4 & 6, ance due beyond the	IFR enroute terminompleted (date_TION PURPOSE at dated Octobe at and functions part of the AC43.13-18 (and TSO-C38d (dated)).	inal and non-precision  27 Oct 2003  S" placard has been  er 21, 2003  is re  properly. There were  Chapters 10, 11 & 12,  Class C & E, and TSC  of 14CFR, Part 91, Se  ed.	approach operation  JA Representate removed.  equired for this appure and adverse effects and AC43.13-2A (0)-C40c, and TSO-C	on when successfitive <u>Victor</u> proval.  Swith any of the of Chapters 2 & 3, as C36e, and TSO-C	ul check flight ther aircraft sy and AC20-138,	conducted in and the stems.
Garmin GNS-530 is a accordance with AC2 "GPS NOT APPROVED FAA Approved Flight This equipment has been dorn Class A(1), and TSO-do additional maintenance attached checklisters	approved for VFR/I 20-138 has been co /ED FOR NAVIGA: Manual Supplement een ground checke he in accordance w C37d Class 4 & 6, ance due beyond the	IFR enroute terminompleted (date_TION PURPOSE at dated Octobe at and functions part of the AC43.13-18 (and TSO-C38d (dated)).	inal and non-precision  27 Oct 2003  S" placard has been  er 21, 2003  is re  properly. There were  Chapters 10, 11 & 12,  Class C & E, and TSC  of 14CFR, Part 91, Se  ed.	approach operation  JA Representate removed.  equired for this appure and adverse effects and AC43.13-2A (0)-C40c, and TSO-C	on when successfitive <u>Victor</u> proval.  Swith any of the of Chapters 2 & 3, as C36e, and TSO-C	ul check flight ther aircraft sy and AC20-138,	conducted in and the stems.
Garmin GNS-530 is a accordance with AC2 "GPS NOT APPROV FAA Approved Flight This equipment has been dor class A(1), and TSO- to additional maintenace attached checkliss	approved for VFR/I 20-138 has been co /ED FOR NAVIGA: Manual Supplement een ground checke he in accordance w C37d Class 4 & 6, ance due beyond the	IFR enroute terminompleted (date_TION PURPOSE at dated Octobe at and functions part of the AC43.13-18 (and TSO-C38d (dated)).	inal and non-precision  27 Oct 2003  S" placard has been  er 21, 2003  is re  properly. There were  Chapters 10, 11 & 12,  Class C & E, and TSC  of 14CFR, Part 91, Se  ed.	approach operation  JA Representate removed.  equired for this appure and adverse effects and AC43.13-2A (0)-C40c, and TSO-C	on when successfitive <u>Victor</u> proval.  Swith any of the of Chapters 2 & 3, as C36e, and TSO-C	ul check flight ther aircraft sy and AC20-138,	conducted in and the stems.
Garmin GNS-530 is a accordance with AC2 "GPS NOT APPROVED FAA Approved Flight.  This equipment has been dor Class A(1), and TSO-NO additional maintenance.	approved for VFR/I 20-138 has been co /ED FOR NAVIGA: Manual Supplement een ground checke he in accordance w C37d Class 4 & 6, ance due beyond the	IFR enroute terminompleted (date_TION PURPOSE at dated Octobe at and functions part of the AC43.13-18 (and TSO-C38d (dated)).	inal and non-precision  27 Oct 2003  S" placard has been  er 21, 2003  is re  properly. There were  Chapters 10, 11 & 12,  Class C & E, and TSC  of 14CFR, Part 91, Se  ed.	approach operation  JA Representate removed.  equired for this appure and adverse effects and AC43.13-2A (0)-C40c, and TSO-C	on when successfitive <u>Victor</u> proval.  Swith any of the of Chapters 2 & 3, as C36e, and TSO-C	ul check flight ther aircraft sy and AC20-138,	conducted in and the stems.
Garmin GNS-530 is a accordance with AC2 "GPS NOT APPROVED FAA Approved Flight This equipment has been dorn Class A(1), and TSO-do additional maintenance attached checklisters	approved for VFR/I 20-138 has been co /ED FOR NAVIGA: Manual Supplement een ground checke he in accordance w C37d Class 4 & 6, ance due beyond the	IFR enroute terminompleted (date_TION PURPOSE at dated Octobe at and functions part of the AC43.13-18 (and TSO-C38d (dated)).	inal and non-precision  27 Oct 2003  S" placard has been  er 21, 2003  is re  properly. There were  Chapters 10, 11 & 12,  Class C & E, and TSC  of 14CFR, Part 91, Se  ed.	approach operation  JA Representate removed.  equired for this appure and adverse effects and AC43.13-2A (0)-C40c, and TSO-C	on when successfitive <u>Victor</u> proval.  Swith any of the of Chapters 2 & 3, as C36e, and TSO-C	ul check flight ther aircraft sy and AC20-138,	conducted in and the stems.
Garmin GNS-530 is a accordance with AC2 "GPS NOT APPROV FAA Approved Flight This equipment has been dor class A(1), and TSO- to additional maintenace attached checkliss	approved for VFR/I 20-138 has been co /ED FOR NAVIGA: Manual Supplement een ground checke he in accordance w C37d Class 4 & 6, ance due beyond the	IFR enroute terminompleted (date_TION PURPOSE at dated Octobe at and functions part of the AC43.13-18 (and TSO-C38d (dated)).	inal and non-precision  27 Oct 2003  S" placard has been  er 21, 2003  is re  properly. There were  Chapters 10, 11 & 12,  Class C & E, and TSC  of 14CFR, Part 91, Se  ed.	approach operation  JA Representate removed.  equired for this appure and adverse effects and AC43.13-2A (0)-C40c, and TSO-C	on when successfitive <u>Victor</u> proval.  Swith any of the of Chapters 2 & 3, as C36e, and TSO-C	ul check flight ther aircraft sy and AC20-138,	conducted in and the stems.

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.

<u> </u>	, more approache annonum ess requirements.
8.	Description of Work Accomplished
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	(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)  Grumman G-21A
	N 600ZE 21 October 2003
INS	STRUCTIONS FOR CONTINUED AIRWORTHINESS CHECKLIST
1.	INTRODUCTION: See block #4 of Form 337.
2.	DESCRIPTION: See block #8 of Form 337.
3.	CONTROL/OPERATION INFORMATION: Operating Manual has been included in aircraft paperwork.
	SERVICING INFORMATION: Not applicable.
<b>5</b> .	MAINTENANCE INSTRUCTIONS: Not applicable.
	TROUBLESHOOTING INFORMATION: Not applicable.
7.	REMOVAL AND REPLACEMENT INFORMATION: Weight & Balance was calculated. Equipment List was updated.
8.	DIAGRAMS: Not applicable.
9.	SPECIAL INSPECTION REQUIREMENTS: Not applicable.
10.	APPLICATION OF PROTECTIVE TREATMENTS: Not applicable.
11.	DATA (STRUCTURAL FASTENERS, INSTALLATION REQUIREMENTS): Not applicable.
12.	LIST OF SPECIAL TOOLS: Not applicable.
13.	COMMUTER CATEGORY AIRCRAFT: Not applicable.
14.	RECOMMENDED OVERHAUL PERIODS: Not applicable.
15.	AIRWORTHINESS LIMITATION SECTION: No additional airworthiness limitations.
	REVISION: Should a revision of this ICA become necessary, a letter will be submitted to the local FSDO with a copy of the revised FAA Form 337 and revised ICA.

Additional Sheets Are Attached

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U.S Department of Transportation	

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

Form Approved OMB No. 2120-0020 For FAA Use Only

1109 INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 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. 1421). Failure to report can result in a civil penalty not to exceed \$1,000 for each such violation (Section 901 Federal Aviation Act 1958) Make Model Grumman G-21A 1. Aircraft Serial No. Nationality and Registration Mark B-100 N 600ZE Name (As shown on registration certificate) Address (As shown on registration certificate) 2. Owner William R. Rose 15 S. Mundhank Road SO Barrington, IL 60010 3. For FAA Use Only 4. Unit Identification 5. Type Make Serial No. Repair Alteration AIRFRAME ·(As described in item 1 above)~-**POWERPLANT** PROPELLER APPLIANCE Manufacturer 6. Conformity Statement A. Agency's Name and Address B. Kind of Agency C. Certificate No. J.A. Air Center U.S. Certified Mechanic NF2R029L DuPage Airport Foreign Certified Mechanic West Chicago, IL 60185 Certified Repair Station Rating: Radio Class 1, 2, 3 D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 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. Signature of Authorized Individual 21 October 2003 Steven J. Carton 7. Approval for Return to Service Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is APPROVED REJECTED FAA Fit Standards Manufacturer Inspection Authorization Other (Specify) Inspector

> Person Approved by Transport Canada Airworthiness Group

Signature of Authorized Individual

Andrew R. Vrchota,

Sum MUnito

FAA Form 337 (12-88)

Date of Approval or Rejection

21 October 2003

FAA Designee

Repair Station

Certificate or

Designation No.

NF2R029L

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.)
Grumman G-21A (Goose) N 600ZE
Removed Bendix/King KT-76A Transponder S/N 7289.
Existing Aero mech. 8140B-20 Encoding Altimeter meets or exceeds requirements and specifications of TSO-C88 and is interconnected with Bendix/King KT-79 Transponder S/N 2227, installed this date, that meets or exceeds the requirements and specifications of TSO-C74B or TSO-C74C. This transponder has been checked with IFR, ATC-600 Test Set in accordance with Part 43, Appendix E and Appendix F for compliance with FAR91.411 and FAR91.413 this date. This transponder used a 3 amp circuit breaker located in the avionics bus area.
Static system has been tested in accordance with FAR91.411 and FAR91.413.
This equipment has been ground checked and functions properly. There were no adverse effects with any other aircraft systems.
All work has been done in accordance with AC43.13-1B Chapters 10, 11 & 12, and AC43.13-2A Chapters 2 & 3.
Weight & Balance and Equipment List have been updated.
end
·
Additional Sheets Are Attached

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I	U.S Department of Transportation
I	Federal Aviation Administration

# MAJOR REPAIR AND ALTERATION

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Form Approved OMB No. 2120-0020 (Airframe, Powerplant, Propeller, or Appliance) For FAA Use Only INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 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. 1421). Failure to report can result in a civil penalty not to exceed \$1,000 りいら Make Grumman Model 1. Aircraft G-21A Serial No. B-100 Nationality and Registration Mark N 600ZE Name (As shown on registration certificate) 2. Owner William R. Rose Address (As shown on registration certificate) 15 S. Mundhank Road SO Barrington, IL 60010 3. For FAA Use Only 4. Unit Identification Unit Make 5. Type Model Serial No. Repair Alteration AIRFRAME -(As described in item 1 above)~ X POWERPLANT PROPELLER APPLIANCE Manufacturer 6. Conformity Statement A. Agency's Name and Address B. Kind of Agency J.A. Air Center C. Certificate No. **DuPage Airport** U.S. Certified Mechanic West Chicago, IL 60185 NF2R029L Foreign Certified Mechanic Certified Repair Station Rating: Radio Class 1, 2, 3 D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 above and described on the reverse or attachments hereto Certify that the repair and/or alteration made to the unit(s) identified in item 4 above and described on the reverse or attachments nereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished Signature of Authorized Individual 21 October 2003 Steven J. Carton Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the APPROVED REJECTED FAA Fit Standards Manufacturer Inspector Inspection Authorization BY Other (Specify) FAA Designee Ø Repair Station Person Approved by Transport Canada Airworthiness Group Date of Approval or Rejection Certificate or Signature of Authorized Individual Designation No. 21 October 2003 Andrew R. Vrchota Meecun Tilleto NF2R029L

8. Description of Work Accomplished
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(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)
Grumman G-21A (Goose)
N 600ZE
Installed S-TEC GPS Steering (GPSS) Converter in accordance with S-TEC Corporation Bulletin 901
The control of the co
This converter provides the S-TEC System 60-2 Autopilot with the capability of accepting GPS roll steering outputs and using them to control aircraft track through the autopilot heading mode.
S-TEC Pilot's Operating Handbook for GPS Steering (GPSS) Converter has been included with aircraft paperwork.
All work has been done in accordance with S-TEC Service Letter No. SL00-003 dated 2-18-00/ revised 12-06-01, FARS 1.1, 43.5, 43.7, 43.9 and Appendix A to Part 43. All work has been done in accordance with AC43.13-1B Chapters 10, 11 & 12 and AC43.13-2A Chapters 2 & 3.
Weight & Balance and Equipment List have been updated.
end ————
Additional Sheets Are Attached

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U.S Department of Transportation

# **MAJOR REPAIR AND ALTERATION**

Form Approved OMB No. 2120-0020	
For FAA Use C	Only
Office Identification	

Federal Aviation Administration									For FAA Use Only				
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and disposi	ions: Print or type a tion of this form. This th violation (Section !	all entries s report is 901 Fede	s. See FAR 43.9, I s required by law ( ral Aviation Act 19	FAR 43 Appe (49 U.S.C. 14 (58)	end 421	ix B, and AC 43.9-1 (or ). Failure to report can	subsequ result in	ent revision there a civil penalty not	of) for in to exce	structions ed \$1,000			
1. Aircraft	Make Grumman					Model G-21A							
I. All Clark	Serial No. B-100						Nationali N 6002	ty and Registration	n Mark		<del></del> -	· · · · · · · · · · · · · · · · · · ·	
2. Owner	Owner Name (As shown on registration certificate) William R. Rose						15 S. N	(As shown on reg Mundhank Roa rrington, IL 60	ad	certificate)			
	<b></b>			· <del></del>		3. For FAA Use Or	nly	<u> </u>					
						4. Unit identification	on						
Unit		Make			_	Model			Serial N		-   8	Туре	1
AIRFRAME	~~~	(As de				ribed in item 1 ab	ove)~	~~~~~~				Repair	Alteration
POWERPLANT												]	
PROPELLER												]	
APPLIANCE	Туре	·								·		]	
<del></del>	Manufacturer											]	
A. Agency's Name						6. Conformity States	nent						<u> </u>
J.A. Air Cente					В.	Kind of Agency			C.	Certificate	Vo.		
DuPage Airpo					$\overline{\Box}$	U.S. Certified Mecha			N	F2R029L			
Nest Chicago				1	<u> </u>	Foreign Certified Me			٦,				
Vest Chicago	, 12 60165			-	$\boxtimes$	Certified Repair Station	חכ		— ка	ting: F	Radio (	Class 1	, 2, 3
D. Loodie H.			<del></del>		L	Manufacturer							
have been herein is tru	the repair and/or alte made in accordance se and correct to the	ration ma with the i best of m	ide to the unit(s) io requirements of Party y knowledge.	dentified in it art 43 of the	U.S	4 above and described Federal Aviation Regi	on the re ulations a	everse or attachmend that the inform	ents her ation fu	eto mished			
Date						Signature of Authorize	d Individ	ual		7/7		<u> </u>	· · · · · · · · · · · · · · · · · · ·
21 October	2003					Steven J. Car	rton			#//i	$\times \langle$	>	
				7	7. 4	pproval for Return to	Service			<del>///</del>			
Administrator of	the Federal Aviation	ns specifi Administr	ed below, the unit	APPROV	ite VE	m 4 was inspected in the	e manne	r prescribed by th	<u> </u>			<del></del>	
	A Fit Standards pector		Manufacturer		7	Inspection Authorizatio	ก	<del></del>	Other	(Specify)		·	
FA	A Designee	$\boxtimes$	Repair Station		=	Person Approved by To Canada Airworthiness	ransport Group					-	
ate of Approval or	-	Desig	icate or Ination No.	•	1	Signature of Authorized	l Individu	ual				<del>-</del>	
l October	2003	1 1	NF2R029t.		- 1	1-d 5		//\/	J	711	ist.		

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8. Description of Work Accomplished	
(If more space is required, attach additional sheets. Identify with aircraft nationality and registration ma	rk and date work completed.)
Grumman G-21A (Goose) N 600ZE	
Installed Garmin GMA-340 Audio/Marker/Intercom in accordance with Installation Manual P/N 190-00149-01 reference to STC # SA00710WI. This Garmin GMA-340 meets the criteria of TSO-C50a and TSO-C35d.	Revision K dated May 2002, with
This Garmin GMA-340 uses a 5 amp circuit breaker located in the avionics bus area.	
Installed equipment has been ground checked and functions properly. There were no adverse effects with ar	ny of the other aircraft systems.
All work was done in accordance with AC43.13-1B Chapters 10, 11, 12 and AC43.13-2A Chapters 2 & 3.	
Weight & Balance and Equipment List have been updated.	
end	
<b>—</b>	

U.S Department of
Transportation
Federal Aviation
44-114 4

## **MAJOR REPAIR AND ALTERATION**

orm Approved	
MB No. 2120-0020	

	Aviation	visition (AITTTAME, POWERPIANT, I				Propeller,	, or Ap	pliance)	L	For FAA Use Only					
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		TIONS: Print or type all sition of this form. This ruch violation (Section 90				endb 421)	B, and AC 43.9-1 ( Failure to report ca	or subseque an result in a	ent revision thereof) a civil penalty not to	for instr exceed	uctions \$1,000	40 00			
1 0	Make Grumman					•		Model G-21A							
'. 4	ircraft	Serial No. B-100					Nationality and Registration Mark N 600ZE					,	···		
2. 0	wner	Name (As show) William R. R	on reg ose	istration certifical	ө)		Address (As shown on registration certificate) 15 S. Mundhank Road So Barrington, iL 60010								
							3. For FAA Use	Only							
	appir appro subje autho OCT	data Identified he cable airworthin byed for the about to conformity crized in FAR 43	ess reve de inspe	equirement escribed air ection by a	s and is craft person	/	/								
				A mapace	U., DFA	-re	Unit Identifica	ition				5. Type			
	Unit		Make				Model		Se	erial No		Repair	Alteration		
AIRFR	AME	~~~~		**************************************	~(As de	scr	ibed in item 1	above)~	~~~~~~~	~~~					
POWE	RPLANT	Г													
PROPE	LLER														
APPLIA	PLIANCE Manufacturer														
A Ager	ncv's Na	me and Address		<del></del>		1-	6. Conformity Sta	tement	·						
J.A. A						B.	Kind of Agency				Certificate No.				
DuPag						는	U.S. Certified Mechanic Foreign Certified Mechanic				NF2R029L				
		go, IL 60185				卜	Certified Repair Station				Rating: Radio Class 1,2,3				
·						ľ	Manufacturer								
	11010 00	nat the repair and/or altern en made in accordance v true and correct to the b	vion one i	requirements of F	dentified in art 43 of the	item e U.S	4 above and describ 5. Federal Aviation R	bed on the r Regulations	everse or attachmen and that the informat	nts here tion furr	to nished	0 (			
Date 21 Oc	tober 2	2003					Signature of Author		lual	J.	1//				
						7. /	Approval for Return		<del>.</del>	//	Mr.	<u> </u>			
Pursu Admin	uant to the	ne authority given person of the Federal Aviation A	s specifi dministr	ied below, the un	t identified	in ite	m 4 was inspected in	n the manne		7					
BY		FAA Fit Standards Inspector		Manufacturer		$\Box$	Inspection Authoriz	ation	ľ	Other (S	Specify)				
		FAA Designee	×	Repair Station			Person Approved b Canada Airworthine								
Date of A	/bbcovst	or Rejection		icata or gnation No.		1	Signature of Author	ized Individ	ual _		<del></del>	······································			
		er 2003	1 1	F2RO29L			Andrew R. V	/rchota	Mu.	17	Links	/			
AA Form	n 337 -	(12-88)													

8. Description of Work Accomplished	
(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work comple	ted.)
Grumman G-21A (Goose)	
N 600ZE	
Installed Goodrich WX-500 Stormscope Weather Mapping System in accordance with Installation Manual #009-11500-001 Revision November 2001.	D dated 09
The Goodrich WX-500 Stormscope Weather Mapping System consists of WX-500 Processor and NY-163 Antenna. Goodrich NY-1 Stormscope Antenna is located at fuselage station 80.00" aft of datum on the lower fuselage.	63
Lightning strike data detected by the WX-500 will display on the Garmin GNS-530 GPS/Nav/Comm/GS/Map.	
The WX-500 uses a 3 amp circuit breaker located in the avionics bus area.	
This equipment has been ground checked and functions properly. There were no adverse effects with any of the other aircraft system	ns.
All work was done in accordance with AC43.13.1B Chapters 10, 11, 12, and AC43.13-2A Chapters 1, 2, 3, and AC23.1309-1.	
No additional maintenance due beyond the requirments of 14 CFR, Part 91, Subpart E ("Maintenance, Preventive Maintenance And See attached checklist for Continued Airworthiness.	Alterations").
Weight & Balance and Equipment List have been updated.	
end	

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.

В.	Description of Work Accomplished
	(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)
	Grumman G-21A (Goose) N 600ZE 21 October 2003
N	STRUCTIONS FOR CONTINUED AIRWORTHINESS CHECKLIST
1.	INTRODUCTION: See block #4 of Form 337.
2.	DESCRIPTION: See block #8 of Form 337.
3.	CONTROL/OPERATION INFORMATION: Operating Manual has been included in aircraft paperwork.
4.	SERVICING INFORMATION: Not applicable.
5.	MAINTENANCE INSTRUCTIONS: Not applicable.
6.	TROUBLESHOOTING INFORMATION: Not applicable.
7.	REMOVAL AND REPLACEMENT INFORMATION: Weight & Balance was calculated. Equipment List was updated.
8.	DIAGRAMS: Not applicable.
9.	SPECIAL INSPECTION REQUIREMENTS: Not applicable.
0	. APPLICATION OF PROTECTIVE TREATMENTS: Not applicable.
1	. DATA (STRUCTURAL FASTENERS, INSTALLATION REQUIREMENTS): Not applicable.
2	. LIST OF SPECIAL TOOLS: Not applicable.
3	. COMMUTER CATEGORY AIRCRAFT: Not applicable.
4	RECOMMENDED OVERHAUL PERIODS: Not applicable.
5	. AIRWORTHINESS LIMITATION SECTION: No additional airworthiness limitations.
6	REVISION: Should a revision of this ICA become necessary, a letter will be submitted to the local FSDO with a copy of the revised FAA Form 337 and revised ICA.

Additional Sheets Are Attached

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U.S Department of Transportation				AND ALTE			Form Approv OMB No. 21			
Federal Aviation Administration	(Airframe, Por	werpla	nt,	Propeller,	or App	liance)		For	FAA Use O	nly
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	Make				Model					
1. Aircraft	Grumman				G-21A					
	Serial No. B-100				Nationality a	nd Registration Ma	ırk			
2. Owner	Name (As shown on registration certifical William R. Rose	ate)		ľ	15 S. Mur	shown on registra idhank Road gton, IL 60010				-
				3. For FAA Use Or	nlv			<del></del>		
approve subject authori:	ta Identified herein complies we ble airworthiness requirements and for the above described airco conformity inspection by a sed in FAR 43.7.	s and is craft, person	4							á
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Unit	Make	Model	Serial No.				Repair	Alteration		
AIRFRAME	**********	(As de:	scrib	ed in item 1 ab	ove)~~~		~~~~	E		×
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.A. Air Center			П	J.S. Certified Mechan	nic		C. Certificate N NF2R029L	o. ———		
huPage Airpor Vest Chicago,	t    60105	[	☐ f	oreign Certified Med	chanic		MEZKUZ9L			
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have been n herein is true	ne repair and/or alteration made to the unit(s) is nade in accordance with the requirements of Pa e and correct to the best of my knowledge.	dentified in it art 43 of the	tem 4 a U.S. F	bove and described ederal Aviation Regu	on the rever lations and t	se or attachments that the information	hereto furnished			
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21 October			- 1					<i>(</i> ×		

7. Approval for Return to Service Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is

APPROVED REJECTED FAA Fit Standards Inspector Manufacturer Inspection Authorization Other (Specify) FAA Designee  $\boxtimes$ Repair Station Person Approved by Transport Canada Airworthiness Group Date of Approval or Rejection Certificate or Designation No. Andrew R. Vrchota Munu II Make 21 October 2003 NF2R029L

8. Description of Work Accomplished
(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)
Grumman G-21A (Goose)
N 600ZE
Installed Garmin GDL-49 Data Link in accordance with Installation Manual #190-00231-00 Revision A dated May 2002, with reference to STC #SA01073WI.
The Garmin GDL-49 receives weather information from ORBCOMM Satellite Constellation and displays the information on the Garmin GNS-530 GPS/Nav/Comm/GS/Map.
Installed Comant CI-177-4 Data Link Antenna at fuselage station 109.00" aft of datum on the top fuselage.
The Garmin GDL-49 uses one (1) 3 amp fuse and one (1) 5 amp circuit breaker located in the avionics bus area.
This equipment has been ground checked and functions properly. There were no adverse effects with any of the other aircraft systems.
All work was done in accordance with AC43.13-1B Chapters 10, 11, 12 and AC43.13-2A Chapters 1, 2, 3.
No additional maintenance due beyond the requirements of 14 CFR, Part 91, Subpart E ("Maintenance, Preventive Maintenance And Alterations") See attached checklist for Continued Airworthiness.
Weight & Balance and Equipment List have been updated.
end
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Additional Sheets Are Attached

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.

٥	Description of Work Accomplished
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	(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)
	Grumman G-21A (Goose) N 600ZE
	21 October 2003
IN:	STRUCTIONS FOR CONTINUED AIRWORTHINESS CHECKLIST
1.	INTRODUCTION: See block #4 of Form 337.
••	THE SECOND SECOND CONTRACT CON
2.	DESCRIPTION: See block #8 of Form 337.
3.	CONTROL/OPERATION INFORMATION: Operating Manual has been included in aircraft paperwork.
	o we see that bear morate paper work.
4.	SERVICING INFORMATION: Not applicable.
5.	MAINTENANCE INSTRUCTIONS: Not applicable.
	TROUBLESUACEUR WITCH AND
<b>D</b> .	TROUBLESHOOTING INFORMATION: Not applicable.
7	REMOVAL AND REDI ACEMENT INCORMATION WAS ALLOW
••	REMOVAL AND REPLACEMENT INFORMATION: Weight & Balance was calculated. Equipment List was updated.
8.	DIAGRAMS: Not applicable.
9.	SPECIAL INSPECTION REQUIREMENTS: Not applicable.
10.	APPLICATION OF PROTECTIVE TREATMENTS: Not applicable.
11.	DATA (STRUCTURAL FASTENERS, INSTALLATION REQUIREMENTS): Not applicable.
12.	LIST OF SPECIAL TOOLS: Not applicable.
13	COMMUTER CATEGORY AIRCRAFT. N. I. III.
١٠.	COMMUTER CATEGORY AIRCRAFT: Not applicable.
14.	RECOMMENDED OVERHAUL PERIODS: Not applicable.
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15.	AIRWORTHINESS LIMITATION SECTION: No additional airworthiness limitations.
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16.	REVISION: Should a revision of this ICA become necessary, a letter will be submitted to the local FSDO with a copy of the revised FAA
	Form 337 and revised ICA.

Additional Sheets Are Attached

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U.S Department of
Federal Aviation

# MAJOR REPAIR AND ALTERATION

Transportation Federal Aviation		(Ai	rframe Da	Wo=-	 دار	nt Dronell	-MUIN		OMB No. 2120-	0020	
Administration		1	······································	werp	ηđ	nt, Propeller	, or Applian	ce)	Office Identificat	For FAA Use O	inly
INSTRUCTION and disposition	ONS: Print or type on of this form. The	e all ent	ries. See FAR 43.9	), FAR 43	Арр	endix B, and AC 43.9-1 ( 421). Failure to report ca	or subsequent revision	thereof) for	1	GLO	3 DUC
for each such	(00000)	901 F	ederal Aviation Act	1958)	.C. I	421). Failure to report ca	en result in a civil penalt	y not to exc	eed \$1,000		
1. Aircraft	Make Grummar	,					Model G-21A				
i. Anciait	Serial No. B-100						Nationality and Regist	tration Mark	,		
2. Owner	Name (As sh	own or	registration certific	ate)			N 600ZE				
	William R.	. Kose					Address (As shown or 15 S. Mundhank SO Barrington, II	Road	on certificate)		
The da	la Ide-No.					3. For FAA Use (					
approve Subject	ed for the at to conformi red in FAR 2003	ove	a di k	rcraft,	is on	/,					
Unit				101, 5.		4. Unit Identificati	on			5. Type	
		Make				Model		Serial	No.	Repair	Alteratio
AIRFRAME	~~~			~~(As c	fes	cribed in item 1 a	bove)	~~~~	~~~~		$\boxtimes$
OWERPLANT											
ROPELLER											
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PPLIANCE	fanufacturer										
						6. Conformity State					
Agency's Name ar	d Address				В	. Kind of Agency	ment				
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est Chicago, I	60185		-			Foreign Certified Me	chanic	—-{ <sup>№</sup>	F2R029L		
					F	Certified Repair Station  Manufacturer		R	ating: Rad	io Class 1	, 2, 3
<ul> <li>I certify that the have been made herein is true a</li> </ul>	repair and/or alter de in accordance on the correct to the b	ation m with the sest of r	ade to the unit(s) id requirements of Pa	lentified in art 43 of th	iten	n 4 above and described S. Federal Aviation Regu	on the reverse or attach	ments here	eto nished		
October 2003						Signature of Authorized		11			
						Steven J. Carto	n //		$V_{A}$	- <del></del> .	
ursuant to the auth	ority given person	s speci	fied below, the unit	identified	in ite	Approval for Return to	Service manner prescribed by	the			
<del></del>	Standards		Manufacturer	APPRO		REJECTED Inspection Authorization			Specify)		
FAA De		Ø	Repair Station			Person Approved by Tra Canada Airworthiness G	Insport	-		• •	
of Approval or Reje		Certif Desig	icate or nation No.		1	Signature of Authorized					<del>,</del>
October 20	03	1	F2RO29L			Andrew R. Vro	chota/2/	M	11. 4	-	

8. Description of Work Accomplished
(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)
Grumman G-21A (Goose)
N 600ZE
Installed Goodrich SkyWatch Traffic Advisory System (TAS) in accordance with Installation Manual P/N 009-10800-001 Revision C dated 23 February 2001, and also in accordance with STC #SA00733CH.
The SkyWatch System consists of (1) TRC-497 Transmitter/Receiver Computer mounted under the floor board and (1) NY-164 Directional Antenna mounted on the top fuselage.
Traffic information detected by the SkyWatch System displays on the moving map and traffic pages of the Garmin GNS-530 GPS/Nav/Comm/GS/Map.
SkyWatch heading information is received from the Bendix/King KCS-55A Slaved Compass System. Connection to a pressure switch automatically reverts the SkyWatch Transmitter to standby mode when the aircraft is on the ground.
The SkyWatch System is interfaced to the AeroMech 8140B-20 Encoding Altimeter and also to the aircraft transponder supression bus. Static System has been checked in accordance with Part 43, Appendix "E" and "F" for compliance with FAR91.217 and FAR91.413 this date.
Garmin GMA-340 Audio/Marker/Intercom has been interfaced to the SkyWatch System using unmuted audio input.
The SkyWatch System uses a 5 amp circuit breaker located in the avionics bus area.
This system has been ground checked and functions properly. A complete operational test was performed and was found to be satisfactory and did not interfere with any navigation or communication equipment on board aircraft.
Required FAA Approved Flight Manual Supplement dated $\underline{QCT\ 2\ 1\ 2003}$ has been included in the aircraft paperwork.
No additional maintenance due beyond the requirements of 14 CFR, Part 91, Subpart E ("Maintenance, Preventive Maintenance And Alterations"). See attached checklist for Continued Airworthiness.
All work has been done in accordance with AC43.13-1B Chapters 10, 11, 12, 13 and AC43.13-2A Chapters 2, 3.
Neight & Balance and Equipment List have been updated.
end
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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.)
	Grumman G-21A (Goose) N 600ZE
	21 October 2003
IN:	STRUCTIONS FOR CONTINUED AIRWORTHINESS CHECKLIST
1.	INTRODUCTION: See block #4 of Form 337.
	Section 1 and 1 and 3 an
2.	DESCRIPTION: See block #8 of Form 337.
3	CONTROL/OPERATION INFORMATION: OF THE PARTY
<b>.</b>	CONTROL/OPERATION INFORMATION: Operating Manual has been included in aircraft paperwork.
4.	SERVICING INFORMATION: Not applicable.
_	MANUTENANCE
Э.	MAINTENANCE INSTRUCTIONS: Not applicable.
6.	TROUBLESHOOTING INFORMATION: Not applicable.
7.	REMOVAL AND REPLACEMENT INFORMATION: Weight & Balance was calculated. Equipment List was updated.
8.	DIAGRAMS: Not applicable.
_	·
9.	SPECIAL INSPECTION REQUIREMENTS: Not applicable.
10.	APPLICATION OF PROTECTIVE TREATMENTS: Not applicable.
11.	DATA (STRUCTURAL FASTENERS, INSTALLATION REQUIREMENTS): Not applicable.
12.	LIST OF SPECIAL TOOLS: Not applicable.
13.	COMMUTER CATEGORY AIRCRAFT: Not applicable.
14.	RECOMMENDED OVERHAUL PERIODS: Not applicable.
	Not applicable.
15.	AIRWORTHINESS LIMITATION SECTION: No additional airworthiness limitations.
10.	REVISION: Should a revision of this ICA become necessary, a letter will be submitted to the local FSDO with a copy of the revised FAA Form 337 and revised ICA,
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Additional Sheets Are Attached

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MAJOR REPAIR AND ALTERATION

Form Approved OMB No. 2120-0020

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Aominis	tration	IONS: Print or type a	ll est-	iec See FAD	430 FA	5 V3 V	nnendiy R and A	C 43 Q-1 /	or subsequent revis	sion thereoft for inst		.UJ		
and	disposi	tion of this form. This ch violation (Section t	s repo	rt is required l	oy law (49	U.S.C	2. 1421). Failure	o report c	an result in a civil p	enalty not to excee	\$1,000			
		Make						Model						
1. Aircr	aft	grumman						G-21A	· · · · · · · · · · · · · · · · · · ·					
		Serial No. B-100			· · · · · · · · · · · · · · · · · · ·				ity and Registration N600ZE	Mark				
		Name (As shown W.R.ROSE	on re	gistration cert	ificate)				(As shown on regis UTH MUNDHA					
2. Own	er	W.K.ROSE							H BARRINGTO					
								<u> คกกาก</u>						
				<del> </del>			B. For FAA Use C	nly			· · · · · · · · · · · · · · · · · · ·			
											.,			
						4	. Unit Identifica	tion	r		5. Type			
Ui	nit	Ma	ike				Model		Seri	al No.	Repair	Alteration		
AIDED A					~~(As d	escri	bed in item 1 a	bove}~~		~~~	X			
AIRFRAME														
											:			
POWER	CPLANT									····				
PROPE	LLER	1		,										
		Туре												
APPLIA	MCE	26												
l		Manufacturer		:										
						6	. Conformity Sta	tement	<del> </del>		<u></u>	<del></del>		
A. Age	ncy's N	ame and Address				B. K	ind of Agency			C. Certificate No	•			
		BENG				X	U.S. Certified M			A&P 1392773				
		H JANE DRIVE				ዙ	Foreign Certified		ic	-	7.6			
ELGIN 60123						胎	Certified Repair Station  Manufacturer							
		hat the repair and/or :	alterat	ion made to th	e unit(s) i	dentifi	ed in item 4 abov	e and des	cribed on the reven	se or attachments h	ereto	· · · · · · · · · · · · · · · · · · ·		
h	iave be	en made in accordan s true and correct to t	ce wit	h the requiren	ents of Pa									
Date	icieni is	s tide and conject to t	10 50	st Or Hily RillOW	euge.		Signature of Aut	horized In	dividual					
08/13	/2001								.1 //					
					Eller	n/	5 open	1						
						<del></del>	proval for Retur			1				
Pursuant to the authority given persons specified below, the unit identified in item 4 was inspect.  Administrator of the Federal Aviation Administration and is APPROVED REJECTED  REJECTED								escribed by the						
FAA Fit Standards Manufacturer X Insp					Inspection Author	orization		Other (Specify)						
BY	<del>  -</del>	FAA Designee		Repair Statio	on		Person Approve Canada Airwort							
Date of	Approv	al or Rejection	Cert	ificate or		L	Signature of Aut	hgrized In	dividual 1					
Date of Approval or Rejection Certificate or Designation No. IA 1392773					Signature of Authorized Individual  Allum Archivelus									

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.)

08/13/2001

N600ZE

GRUMMAN

G-21A

S/N B-100

HOURMETER READS 1305.4 HRS.

REPAIRED DAMAGED RUDDER TRAILING EDGE BETWEEN WATERLINE # 40.1/2 AND 56 9/16

REMOVED FABRIC BOTH SIDES OF RUDDER FROM SPAR BACK TO TRAILING EDGE & FROM

WATERLINE #33 3/16 TO 81 5/16 TO INSPECT FOR ANY HIDDEN DAMAGE

REPLACED RIB @ W/L # 56 9/16 & REPAIRED RIB @ W/L # 48 1/2 STRAIGHTEN TRAILING EDGE

AND NAVIGATION MOUNT

REPLACED MATERIAL WAS SAME WEIGHT AND TYPE AS REMOVED.

BARE ALUMINUM WAS TREATED WITH.

DUPONT ALUMINUM REFINISHING SYSTEM STEP A #225 & STEP B #226

COATED WITH COLAR PRIMER EPOXY PRIMER #824S & ACTIVATOR

NEW FABRIC WAS ATTACHED USING SUPERFLITE #102 AND SUPERFLITE U-500 ADHESIVE.

1" RIB STITCH SPACING WAS USED PER THE ORGINAL COVERING AND THE PATCH WENT OVER THE

EXISTING FABRIC AND RIB LACING AND WAS RESTITCHED OVER THE ORGINAL LACING.

AFTER LACING AND TAPES WERE INSTALLED THE FINISH WAS BUILT UP WITH SUPERFLITE SYSTE VI.

SF6500 PRIMER FILLER, SF6600 PRIMER CATALST, SF6700 FLEX AGENT & SF6820 REDUCER.

COLOR COAT WAS IMRON, MATERHORN WHITE #N3090HN.

ALL MATERIAL USED WAS SAME AS ORGINAL OR EQUIVLENT.

MANUALS REFERENCED AS FOLLOWS,

GRUMMAN STRUCTURAL MANUAL NAV.AER. 01-85VA-3

PAGES 89,93 FIG.48,94 FIG49,SECTON 1 PARAGRAPH 17 & FIG.120

AC.43.13-1B

CHAPTER 4 SECTION 4 PARAGRAPH 4-36 (A),(B),(D),4-37,4-52 & 4-58.

CHAPTER 2 SECTION 1, PARAGRAPH 2-1 TO 2-15, 2-42 (A), (B), (D), (E), (G) & (H).

SUPERFLITE SYSTEM VI COVERING MANUAL # D-102B

END

US Department of Transportation Federal Aviation Administration

FAA Form 337 (12-88)

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

Form Approved OMB No. 2120-0020

For FAA Use Only

Office Identification
DPA-FSDO

NICS

Aircraft   Serial No.   Seria	and	disposition	of this form. Th	his fo	l entries. See FAR 43. orm is required by law ( 1 Federal Aviation Act	(49 U.S	S.C. 1-	Appendix B, and A 421). Failure to r	AC 43.9-1 (or report can res	r subsequent revi sult in a civil pena	sion thereof) fity not to exce	or instruction	ons
Serial No.    B-100   Name (As shown on registration certificate)   Address (As shown on registration certificate)			Make						Model C	3-21A			
2. Owner Rose Packing Co.  Rose Packing Co.  B 5 S. Barrington, IL 60010  The data identified berein complication and is approved to the above described airworthiness requirements and is approved to the above described in item 1 above)  Unit Make Model Serial No. Repair Alteration  AIRFRAME (As described in item 1 above)  Unit Make Model Serial No. Repair Alteration  AIRFRAME (As described in item 1 above)  PROPELLER  APPLIANCE Manufacturer  D. I certificated Mechanic Randor Serial No. Repair Alteration was a contained with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the Information furnished here in scoordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the Information furnished here in Store and correct to the best of my knowledge.  D. I certify that the repair and/or alteration made to the unit(e) identified in item 4 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 here in Store and correct to the best of my knowledge.  Date 12/3/98    FAA Use Only Statement	1. Aı	rcraft		 -100							lark		
approache approache for the above described aircraft subject to contembry inspection by authorizes in RN 83.   Inc. 0 3.183	2. 0	wner						•	6	65 S. Barringto	n Road	te)	
Unit Make Model Serial No. Repair Alteration  AIRFRAME (As described in item 1 above)  Type APPLIANCE  Type Manufacturer  6. Conformity Statement A. Agency's Name and Address J.A. Air Center DuPage Airport West Chicago, IL 60185  D. I certificated Repair Station Manufacturer  D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 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.  Date 12/3/98  T. Approval for Return to Service  Pursuant to the authority given persons specified bow, the unit identified in item 4 above sing persons specified bow, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is  [Signature of Authorized Individual]  FAA Fit. Standards   Manufacturer   Inspection Authorization   Cher (Specify)    FAA Designee   X. Repair Station   Person Approved by Transport Canadian Alivorithiness Group    Date of Approval or Rejection   Certificate or Designation No.   Signature of Authorized Individual   Authorized Ind			appi app subj auti	roved ject horize	le airworthiness d for the above to conformity in:	requir ve de spectio	remen lescrib on b	nts and is bed aircraft, by a person	7				
AIRFRAME  (As described in item 1 above)  X  POWERPLANT  Type  APPLIANCE  A. Agency's Name and Address  J.A. Alf Center DuPage Altport West Chicago, IL 60185  D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 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.  Date  12/3/98    FAA Fit. Standards   Manufacturer   Inspection Authorization   REJECTED   REJECTED   Respectively and the repair and/or alteration and is   APPROVED   REJECTED   Respectively and the repair and/or alteration and is   Repair Station   Repeat Not the manner prescribed by the Administration and is   Repair Station   Respectively			1	Date	<del></del>		#Puni	Tidentification				5. Type	T
PROPELLER  APPLIANCE  Type  APPLIANCE  Manufacturer  6. Conformity Statement  A. Agency's Name and Address  B. Kind of Agency  C. Certificate No.  J.A. Air Center  DuPage Airport  West Chicago, IL 60185  D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 above and described on the reverse or attachments 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.  Date  12/3/98  Signature of Authorized Individual  7. Approval for Return to Service  Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is    FAA Fit. Standards   Inspector   Manufacturer   Inspection Authorization   Other (Specify)		Unit		M	ake			Model		Serial	No.	Repair	Alteration
PROPELLER  APPLIANCE    Type	AIRE	RAME			***************************************	(As d€	∍scrit	bed in item 1 a	bove) 🚙		Markey		х
A. Agency's Name and Address  B. Kind of Agency  C. Certificate No.  J.A. Air Center DuPage Airport West Chicago, IL 60185  D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 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.  Date  12/3/98  T. Approval for Return to Service  Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is  FAA Fit. Standards Inspector  FAA Pit. Standards Manufacturer Inspection Authorization  FAA Possignee x Repair Station  Person Approved by Transport Canadian Airworthiness Group  Date of Approval or Rejection  Certificate or Designation No.  Signature of Authorized Individual  Other (Specify)	POV	VERPLANT								-			
A. Agency's Name and Address  B. Kind of Agency  J.A. Alr Center  DuPage Airport  West Chicago, IL 60185  D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 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.  Date  12/3/98  Signature of Authorized Individual  T. Approval for Return to Service  Charles D. Walling  Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is  FAA Fit. Standards Inspector  Inspector Authorization  Other (Specify)  Person Approved by Transport Canadian Airworthiness Group  Date of Approval or Rejection  Certificate or Designation No.  Signature of Authorized Individual	PRO	PELLER					_						
A. Agency's Name and Address  J.A. Alr Center DuPage Airport West Chicago, IL 60185  D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 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.  Date 12/3/98  Signature of Authorized Individual Charles D. Walling  7. Approval for Return to Service  Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is  FAA Fit. Standards Inspector  Manufacturer  Inspection Authorization  Person Approved by Transport Canadian Airworthiness Group  Date of Approval or Rejection  Certificate No.  RATING: RADIO Class 1, 2, 3  NF2R029L  RATING: RADIO Class 1, 2, 3  NF2R029L  Signature of Authorized Individual  Charles D. Walling  Charles D. W	APP	LIANCE											
A. Agency's Name and Address  J.A. Alr Center DuPage Airport West Chicago, IL 60185  D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 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.  Date 12/3/98  Signature of Authorized Individual Charles D. Walling  7. Approval for Return to Service  Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is  FAA Fit. Standards Inspector  Manufacturer  Inspection Authorization  Person Approved by Transport Canadian Airworthiness Group  Date of Approval or Rejection  Certificate No.  RATING: RADIO Class 1, 2, 3  NF2R029L  RATING: RADIO Class 1, 2, 3  NF2R029L  Signature of Authorized Individual  Charles D. Walling  Charles D. W					L	6. (	Confor	rmity Statement		<u> </u>		<u></u>	
DuPage Airport West Chicago, IL 60185    Foreign Certificated Mechanic   X   Certificated Mechanic   X   Certificated Repair Station   Manufacturer	A. A	Agency's Na	me and Addres	38				ind of Agency			C. Certificat	e No.	
West Chicago, IL 60185  X Certificated Repair Station NF2R029L  NF2R029L  D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 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.  Date 12/3/98  Signature of Authorized Individual Charles D. Walling Charles D. Walling  T. Approval for Return to Service  Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is  FAA Fit. Standards Inspector  FAA Designee  Repair Station  Person Approved by Transport Canadian Airworthiness Group  Date of Approval or Rejection  Certificate or Designation No.  Signature of Authorized Individual													
D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 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.  Date  12/3/98    Signature of Authorized Individual   Charles D. Walling				;		1	<b> </b>	ļ- <u>-</u>			· ·	-	
D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 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.  Date  12/3/98    Signature of Authorized Individual   Charles D. Walling						1		<del></del>	ilf Station		NF2R029	/L	
To Approval for Return to Service  Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is    FAA Fit. Standards	1	have been n	nade in accorda	ance v	with the requirements	of Part	t 43 of	ed in item 4 above	e and describ al Aviation Re	ped on the reverse gulations and that	e or attachmer t the information	its hereto on	
7. Approval for Return to Service  Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is x APPROVED REJECTED  FAA Fit. Standards Inspector Inspector Inspection Authorization  Person Approved by Transport Canadian Airworthiness Group  Date of Approval or Rejection Certificate or Designation No.  Signature of Authorized Individual	12/3/98												
Administrator of the Federal Aviation Administration and is    X APPROVED   REJECTED     FAA Fit. Standards   Manufacturer   Inspection Authorization     FAA Designee   X Repair Station   Person Approved by Transport Canadian Airworthiness Group					7.	Appro	val for		_ ~_ ~	14/10/	<del>// /</del>		
BY Inspector Inspection Authorization  FAA Designee x Repair Station Person Approved by Transport Canadian Airworthiness Group  Date of Approval or Rejection Certificate or Designation No.  Signature of Authorized Individual	Pur Adn	suant to the ninistrator of	authority given f the Federal A	perso viation	ons specified below, the Administration and it	ne unit s	identi	ified in item 4 wa	s inspected in		scribed by the		
Date of Approval or Rejection Certificate or Designation No.  Signature of Authorized Individual	BY	1 5	1		Manufacturer		inspe	ection Authorizati	ion	Other (Specify)			
Designation No.				х	Repair Station		Perso Cana	on Approved by I	Fransport ss Group		1	<u></u>	
		• •	or Rejection		Designation No.		-			A. A.	Z.X		

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.)
Grumman G-21A N 600ZE
Inspected and updated Northstar M3 Global Positioning System (previously installed on Form 337 dated 18 June 1996) in accordance with Installation Manual P/N GM611 Rev. C dated May 1, 1997, and also in accordance with manufacturer's original installation per STC #SA00464NY.
Update was done using steering information to the #1 Nav Indicator (Bendix/King KI-525A HSI) interfaced to S-TEC System 60-2 Autopilot using switch and relay. Indicator light illuminates when information is presented on Nav #1 or GPS. If ILS frequency is selected on Nav #1, HSI automatically reverts to Nav #1.
Existing AmeriKing AK-350 Encoder remains interfaced to the Northstar M3:
Existing Aero Antenna GPS Antenna (P/N AT-575-9) remains located on the top fuselage and meets the requirements of TSO-C129.
A post installation check out was performed in accordance with Northstar Installation Manual. Transmit check was completed for the following frequencies: 121.125, 121.150, 121.175, 121.200, 121.225, 121.250, 131.250, 131.300, 131.325 and 131.350 MHz. Also, interference check out between GPS and VOR has been performed.
This equipment has been ground checked and functions properly. There were no adverse effects with any of the other aircraft systems.
This equipment is approved for VFR/IFR domestic en route, terminal and non-precision approach operation when successful test flight has been completed (date 12-03-98 pilot name William Meier pilot certificate # 2057222 and the "GPS NOT APPROVED FOR NAVIGATION PURPOSES" placard has been removed.
FAA Approved Flight Manual Supplement dated is required for this approval.
All work was done in accordance with AC43.13-1A Chapters 11, 13, 15 and AC43.13-2A Chapters 2, 3 and AC20-138 and TSO-C129.
No additional maintenance due beyond the requirements of 14 CFR, Part 91, Subpart E ("Maintenance, Preventive Maintenance, And Alterations"). See attached checklist for Continued Maintenance.
No change to Weight & Balance.
E N D

14.

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

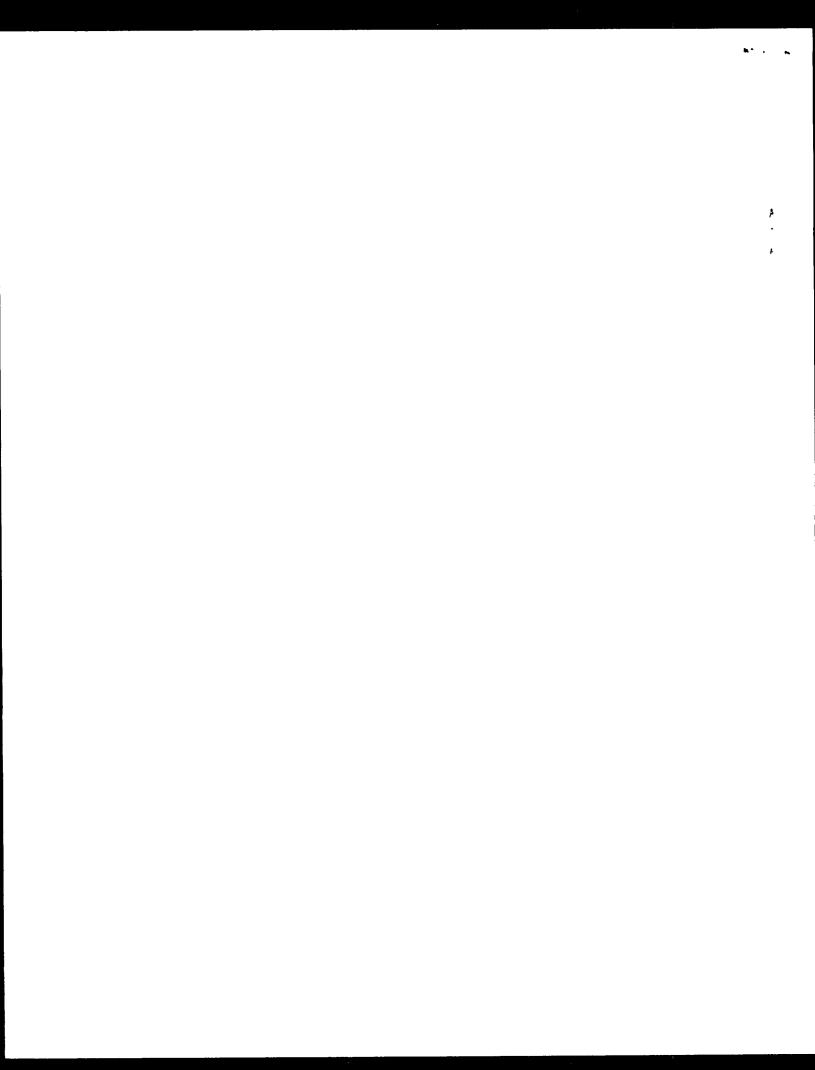
(If more space is required, attach additional sheets, identify with aircraft nationality and registration mark and date work completed.)

Grumman G-21A N 600ZE

Instructions for Continued Airworthiness checklist:

- 1. INTRODUCTION: See block #4 of Form 337.
- 2. DESCRIPTION: See block #8 of Form 337.
- 3. CONTROL/OPERATION INFORMATION: Equipment operating manual has been included with aircraft paperwork.
- 4. SERVICING INFORMATION: Not applicable
- 5. MAINTENANCE INSTRUCTIONS: Not applicable
- 6. TROUBLESHOOTING INFORMATION: Not applicable
- 7. REMOVAL AND REPLACEMENT INFORMATION: Not applicable
- 8. DIAGRAMS: Not applicable
- 9. SPECIAL INSPECTION REQUIREMENTS: Not applicable
- 10. APPLICATION OF PROTECTIVE TREATMENTS: Not applicable
- 11. DATA (STRUCTURAL FASTENERS, INSTALLATION REQUIREMENTS): Not applicable
- 12. LIST OF SPECIAL TOOLS: Not applicable
- 13. COMMUTER CATEGORY AIRCRAFT: Not applicable
- 14. RECOMMENDED OVERHAUL PERIODS: Not applicable
- 15. AIRWORTHINESS LIMITATION SECTION: No additional airworthiness limitations
- 16. REVISION: Should a revision of this ICA become necessary, a letter will be submitted to the local FSDO with a copy of the revised FAA Form 337 and revised ICA.

Additional Sheets Are Attached



# US Department

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

Form Approved OMB No. 2120-0020

For FAA Use Only

	insportation ral Aviation									l o	псе	·	nks	
Admi	inistration			- 7.5.40			#-D		4 (0)			-i thoronfi	<u> </u>	Figns
INST.	RUCTION	IS: Print or type	e all e	ntries. See FAR 43.9 in is required by law (4	9, FAK 49 U.S	l 43 A	ppendix B, and 121). Failure to	report ca	in tes	r subsequem sult in a civil p	i revi penal	ty not to exc	.101 111511400 eed \$1,000	)
for ea	ach such v	iolation (Section	901	Federal Aviation Act	of 195	8)		· · · · · ·		<del> </del>		<u> </u>		
		Make Gru	ımm	an				Model	G	21A				
1. Airo	raft	Serial No.						Nationali	•	nd Registratio	n M	ark		
				ristration cortifica	-401			Address		shown on re	aista	etion certifica	ate)	
2. Ow	ner			n registration certifica acking Co.	ie)			Address	65	5 S. Barring arrington,	gtor	Road	no)	
		<u> </u>				Fort	FAA Use Only	<u> </u>					<del></del>	
AIRW DESC	TDATA FORTHINESS DRIBED AIR HORIZED IN	CRAFT SUBJECT T	AND	TEREIN COMPLIES WIT IS APPROVED ONLY FO VIFORMITY INSPECTION	TH APP	LICABL	LE							
JUL	L 23	1998 4	Ľ	mil 1		_								
	- Data	F.	AA Insi	pector	4	. Unit	Identification						5. Type	
ι	Jnit		Mai	ke			Model			Se	erial	No.	Repair	Alteration
AIRFRAME (As described in item 1 above)										x				
POW	ERPLAN	П												
PROF	PELLER													
ADDI	IANCE	Туре	-											
APPL	.IANCE	Manufacturer							ļ					
					6. (	Confor	mity Statemen	t						
A. A	gency's N	lame and Addre	ss				ind of Agency					C. Certifica	te No.	
	. Air Cei						U.S. Certificated	1 Mechanic	;			RATING:		
Du	Page Ai	rport go, IL 60185			ļ		Foreign Certifica					Class 1,	2, 3	ì
110	or Omou	90, 12 00 100				X	Certificated Rep	air Station				NF2R02	9L	
						L	Manufacturer							
l h	nave been	made in accord	ance	teration made to the u with the requirement ect to the best of my	is of Pa	art 43 i	of the U.S. Fed	bove and deral Avia	desc ition f	ribed on the Regulations a	reve and t	rse or attach hat the infor	ments here	≱to
Date						\$ign:	ature of Author	ized/Indiy	ridy(a)			`		
O	7-23-19	98				<b>XX</b>	David H. Kra	nt (	XX	xu	P	<del>/-</del>		
	<u></u>			7.	Appro	val fo	r Return to Ser	vice						
Purs	suant to the	e authority giver of the Federal A	pers	ons specified below, on Administration and	the uni	it iden	tified in item 4	was inspe	ected	in the mann	ier pr	escribed by	the	
BY	I I	A Flt. Standards pector		Manufacturer		Inspe	ection Authoriza	ation		Other (Spec	cify)	-		
-	FA	A Designee	х	Repair Station		Perso Cart	on Approved b adian Airworthi	y Transpo ness Grou	ort up				1	_
	Date of Approval or Rejection  O7-23-1998  Certificate or Designation No.  NF2R029L  Caradian Airworthiness Group  Signature of Authorized Individual  Signature of Authorized Individual  Devent H. Krent													

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.)									
Grumman G21A N 600ZE									
Removed Quietflite Intercom Model Number SRC 10B, S/N 2420.									
Installed an N.A.T. AA85-001 Intercom S/N 1129 in accordance with N.A.T. AA85-001 InterVox II Intercom Manual, Rev. 1.00, dated Oct 09 1997.									
This equipment has been ground checked and functions properly. There were no adverse effects with any of the other aircraft systems.									
All work was done in accordance with AC43.13-1A Chapters 11, 13, 15 and AC43.13-2A Chapters 2 and 3.									
No additional maintenance due beyond the requirements of 14 CFR, Part 91, Subpart E ("Maintenance, Preventive Maintenance and Alterations") and also manufacturer's installation manual dated Oct 09 1997.									
Weight change negligible.									
ENDEND									
•									
Additional Sheets Are Attached									

US Department of Transportation Federal Aviation

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

Form Approved OMB No. 2120-0020

For FAA Use Only

Office Identification

Ma

Ad	ministratio	<u>a</u>							<u> </u>		//	nex	
and	i dispositio	n of this form. T	his fo	l entries. See FAR orm is required by la 1 Federal Aviation A	w (49 U.	S.C.	Appendix B, and 1421). Failure to I	AC 43.9-1 report can	(or subsequent rev result in a civil pena	ision thereof) f Ity not to exce	or instructi ed \$1,000	ons	
	ircraft	Make		man American				Model	G-21A				
1. A	iiciaii	Serial No.	-100			Nationality and Registration Mark N 600ZE							
2. 0	wner			on registration certif Packing Co.	icate)			Address (As shown on registration certificate) 65 S. Barrington Road Barrington, IL 60010					
Ţ						3. Fo	r FAA Use Only						
	The					<del>18</del>	<del></del>						
	applic					is "							
	appro	red for the	: 21 :Hu	bove described inspection by	airce	li, Sn							
	autho	ized in FAR 43	11.J	HISPOCAULI US	20130	781							
ĺ	DEC.	ized in FAR 43.	M	ler K	<u>~~~</u>		. 1			•			
	Di	NA.		FAA Inspector,	DPA FSL	4). Un	it Identification		<del></del>		5. Type		
•	Unit		М	lake			Model		Seria	l No.	Repair	Alteration	
AIRI	FRAME.			*******	(As de	escri	bed in item 1 a	bove) 🖚				х	
POV	VERPLAN	T	,			,		•		,			
PRC	PELLER				1	;	<b>.</b>						
		Type											
APP	LIANCE	Manufacturer			<u>.</u>  : .		•			il.			
		manulacturer		,	1.		:						
					- 11	Confo	rmity Statement				l		
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-io	liet Avio	nics, Inc.	!	1. 1. 1	······································		U.S. Certificated	Mechanic	····			· · · · · ·	
Du	ıPage Ai	rport	_ :				Foreign Certificat	ed Mechan	ic	RATING: RADIO Class 1, 2, 3			
VVe	est Chica	go, IL 6018	5 : ;			X Certificated Repair Station NF2R0					-		
							Manufacturer				· L.,		
	have been	made in accorda	ance	teration made to the with the requiremen rect to the best of m	ts of Par	t 43 o	ed in item 4 abov	e and desc al Aviation	cribed on the revers Regulations and tha	e or attachmer It the informati	nts hereto on		
Date					,		nature of Authoriz	ed Individu	ıal		1		
	12-17-97						•		- 11	15			
					7 4		Ernest F. Eving		MUST	(Onu	eger		
				<del> </del>			r Return to Servi		<del></del> -		0		
Pur Adn	suant to th	e authority given of the Federal A	pers viation	ons specified below n Administration and	, the unit i is	iden	tified in item 4 wa		d in the manner pre	scribed by the			
BY	1 1.	Fit. Standards ector		Manufacturer		Insp	ection Authorizati	ion	Other (Specify)				
		Designee	x	Repair Station			on Approved by adian Airworthine						
		ıl or Rejection		Certificate or Designation No.		Sign	ature of Authorize	ed Individu	ial d	·			
1	9 Dece	mber 1997	,	NF2RO29L		Le	onel C. F	ritz	3				

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 regisfration mark and date work completed.) Grumman G-21A (Goose) N 600ZE Upgraded existing S-TEC System 50 (previously installed on Form 337 dated 12-22-88) to an S-TEC System 60-2 Two Axis Automatic Flight Guidance System (28 volt system). Installation was done in accordance with General Installation Information Bulletin #100, Single Cue Flight Director/Steering Horizon Bulletin #361, and Altitude Vertical Speed Selector/Altitude Alerter Bulletin #360. Installation was done in accordance with previous installation done at this facility (see Form 337 dated 05-16-97 referencing FAA Approved installation of S-TEC System 60-2 in Grumman G-21A, N 37487). The Trim Servo P/N 0106-T9 is mounted and centered between fuselage stations 132.00" and 143.50" aft of datum. The mounting was done using 6061-T6 x 3/16" alum. angle and AN hardware. The servo mounting was pull-tested 🔩 with the following results: forward G force of 9.0g x 2.9 lbs = 26.10 lbs with no damage or distortion to existing. bulkheads or mounting angles installed: downward G force of 6.6g x 2.9 lbs = 19.14 lbs with no damage or distortion to existing bulkheads or mounting angles installed; upward G force of 3.0g x 2.9 lbs = 8.70 lbs with no damage or distortion to existing bulkhead or mounting angle installed; sideward G force of 1.5g x 2.9 lbs = 4.35 lbs with no damage or distortion to existing bulkhead or mounting angles installed. A 12" extension was added to the trim, gable to allow for adequate wraps on the servo capstan. A torsional pull-test was conducted on the autopilot servo. The following information was received from S-TEC Engineering Department (per previous installation done at this facility referencing Grumman G-21A, N 37487) on how to arrive at a torsional pull valve: "Take the clutch setting torque, add 40%, times that by 1.5, take that valve times 1.15, then pull both forward and aft on each servo". Trim servo clutch setting of 25 lbs. + 40% (or 10 lbs) = 35 lbs x 1.5 x 1.15 = 60.37 lbs. A pull-test of the servo mounting brackets plus an additional 25% was conducted with no deflection of the bracketry or associated bulkheads was noted. The Pitch Flight Guidance Computer P/N 0110 and Roll Flight Guidance Computer P/N 0109 are installed forward of copilot instrument panel. The Single Cue Flight Director/Steering Horizon P/N 6413-28L has been installed inplace of the existing pilot artificial horizon in the pilot panel. Pilot artificial horizon has been relocated to the pilot instrument panel. The Altitude Vertical Speed Selector/Altitude Alerter P/N 0140 has been installed in place of the existing altitude alerter system in the pilot panel. System was ground checked and functions properly. There were no adverse effects with any of the aircraft systems. n 12-19-97 by Bill Rose (pilot certificate # ). FAA Approved Airplane Flight Manual Supplement dated  $0 \le 0.19$  0.37 is 12-19-97 by Bill Rose Aircraft has been flight tested on 1266379 required with this installation. The completed S-TEC System 60-2 Two Axis Automatic Flight Guidance System was wired in accordance with S-TEC Drawing #9006, 9911-1, and 1002. All work was done in accordance with AC43.13-1A Chapter 2 Section 3, and Chapter 4 Sections 1 & 2, and Chapter 5 Section 1, and Chapter 6 Paragraph 251, and Chapter 11 Section 1 through 7, and Chapter 13. All work was done in accordance with AC43.13-2A Chapter 1. Weight & Balance and Equipment List have been updated.

Additional Sheets Are Attached

US Department of Transportation Federal Aviation

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

Form Approved OMB No. 2120-0020

For FAA Use Only

Office Identification

1110

Admi	nistration									1/1	100	
and d	isposition	of this form.	This f	orm is required by law	(49 U.	R 43 Appendix B, and S.C. 1421). Failure to	AC 43.9-1 report can	1 (or subsequent re result in a civil per	evision thereof) a alty not to exce	for instruct		
		Make		1 Federal Aviation Ac man American	10119	56) <u>.                                    </u>	Model	G-21A	· · · · · · · · · · · · · · · · · · ·			
1. Airc	rait	Serial No.	3-100	)			Nationali	Mark				
2. Own	er			on registration certific Packing Co.	ate)		Address	(As shown on regi 65 S. Barring Barrington, IL	ton Road	ite)		
		<u> </u>				3. For FAA Use Only	<u> </u>					
					,	4. Unit Identification				5. Type		
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nav	/e been m	iade in accord	iance	teration made to the u with the requirements rect to the best of my I	of Par	Manufacturer lentified in item 4 above t 43 of the U.S. Federa	e and desc I Aviation	cribed on the rever Regulations and th	se or attachmer at the informati	nts hereto on		
Date				- Cot to the best of my	WIO WIE		<del></del>	·		_		
	-17-97					Signature of Authorize  Ernest F. Eving		eal Essaes I	1 =		,	
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<sub>SY</sub>	FAA f	lt. Standards ctor		Manufacturer		Inspection Authorization	·	Other (Specify)				
		Designee	х	Repair Station		Person Approved by T Canadian Airworthines	ransport ss Group					
	Approval ( <b>17-97</b>	or Rejection		Certificate or Designation No. NF2R029L		Signature of Authorize			1 ( +		`	
AA Fo	rm 337	(12-88)				Ernest F. Eving	er	5 ruest	74 6	Zecu	alc	
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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.)		, **) ,	
Grumman G-21A (Goose) N 600ZE	•		
Installed Ameri-King AK-350 Encoder S/N 3521704 as per AC43.13-1A Chapter 2. This encoder meets requirements and specifications of TSO-C88 and is interconnected with S-TEC Altitude Selector/Alert installed this date.	er P/N 0 140		
This equipment has been ground checked and functions properly. There were no adverse effects will other aircraft systems.	h any of the	,	
Weight & Balance and Equipment List have been updated.		3	ľ
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Additional Sheets Are Attached			ı

U.S. GOVERNMENT PRINTING OFFICE: 1992-769-012/60157

### US Department of Transportation Federal Aviation Administration

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

Form Approved OMB No. 2120-0020

For FAA Use Only

Office Identification DPA-FSDOLQ

INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 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. 1421). Failure to report can result in a civil penalty not to exceed \$1,000 for each such violation (Section 901 Federal Aviation Act of 1958).

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		Make						Model						
1. Ai	1. Aircraft	Grumman			_			G-21						
1. Aircraft		Serial No.					Nationality and Registration Mark							
		B-100					N 600ZE							
		Name (As she	own	on registration ce	tificate	)	) Address (As shown on registration ce				ertificate)			
		Rose Pa	cki	.ng				65 S	. Barrington	Road				
2. 0	wner			9		Barrington, IL 6001					)			
								2421		55510				
						3. For FAA Use Only								
	4. Unit Identification 5. Type													
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APPL	IANUE	Manufacturer	•											
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		Airport				x				Clas	ss 1, 2,	3		
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Date						Sig	nature of Author	orized Ind	(vidual)		11			
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		Fit. Standards		Manufacturer		Inco	action Authoria	ation	Other (Specify)					
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· 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.)
Installed Shadin Company, Inc. Model 8800M Altitude Encoder in accordance with Operation/Installation Guide P/N 1N-IN8100A.
Altitude Encoder interfaces existing Shadin Company, Inc. Model AMS-2000 Altitude Management System.
This equipment has been ground checked and functions properly. There were no adverse effects with any of the other aircraft systems.
All work was done in accordance wtih AC43.13-1A Chapters 11, 13, 15 and AC43.13-2A Chapters 2 and 3 and TSO-C88a.
Weight & Balance and Equipment List have been updated.
====== end ======

☐ Additional Sheets Are Attached `

US Department of Transportation Federal Aviation Administration

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

Form Approved OMB No. 2120-0020

For FAA Use Only

Office Identification

DPA-FSDO MC

INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 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. 1421). Failure to report can result in a civil penalty not to exceed \$1,000 for each such violation (Section 901 Federal Aviation Act of 1958).

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1 A	ircraft	Grumma	n					G-21	A					
l ¨ ^	o. u.t	Serial No.						Nationali	ty and Registratio	n Mark				
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		Name (As si	ame (As shown on registration certificate)						Address (As shown on registration certificate)					
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	Unit		Ма	ake			Model		Serial No	).	Repair	Alteration		
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		Avionics, Airport	TII	c.		Foreign Certificated Mechanic					Rating: Radio			
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		June 1996				ر <b>ا</b> ا	rd H. Kra	A A	Kran					
					7. Ap	prova	I for Return To	Service			······································			
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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.)

Removed Northstar M1 Loran.

This upgrade references Form 337 dated 11 June 1996 when this facility installed Northstar M3 Global Positioning System in accordance with Installation Manual P/N GM610, Rev. A dated March 1, 1994 and also in accordance with similar installation per STC #SA00220NY.

Installation was done using steering information to the #1 Nav Indicator (Bendix/King KI-525A HSI) interfaced with S-TEC System 50 Autopilot using switch and relay. Indicator light illuminates when information is presented on Nav #1 or GPS. If ILS frequency is selected on Nav #1, HSI automatically reverts to Nav #1.

Existing Aeromech 8140B Encoding Altimeter is interfaced to the Northstar M3. Static system has been tested in accordance with FAR 91.411 and FAR 91.217.

Following is annunciator layout:

Center Pi	ilot's Panel:	Upper R/H Pilot's Panel:						
0	0 0 0 0	(light)						
_	PAR WP VFR RAIM	(switch)	GPS NAV					

Northstar AN-120 GPS Antenna has been installed and is located at station 155.00" aft of datum on the top fuselage and meets the requirements of TSO C-129.

A post installation checkout was performed in accordance with Bendix/King Installation Manual. Transmit check was completed on both #1 and #2 comms for the following frequencies: 121.125, 121.150, 121.175, 121.200, 121.225, 121.250, 131.200, 131.225, 131.250, 131.275, 131.300, 131.325, and 131.350 MHz. Also, interference checkout between GPS and VOR has been performed.

This equipment has been ground checked and functions properly. There were no adverse effects with any of the other aircraft systems.

Aircraft has been flight tested in accordance with the requirements of AC20-138 on \_\_06-12-96 by \_\_William R. \_Meier \_\_, pilot, and test results are attached. This system is approved for IFR/enroute and terminal operation when the FAA Approved Flight Manual Supplement dated \_\_JUN 18 1996 \_\_ is received and the "GPS NOT APPROVED FOR NAVIGATION PURPOSES" placard has been removed.

All work was done in accordance with AC43.13-1A Chapters 11, 13, 15 and AC43.13-2A Chapters 2 & 3 and AC20-138 and TSO-C129 (Class A2) and also in accordance with FSAW 94-32A.

Weight and Balance has been computed and entered in appropriate aircraft paperwork.

========END==============

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

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8.	Descr	noilai	of	Work	Acco	mplished	

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

#### GPS TEST FLIGHT

1. Τo certify GPS, it is necessary to flight check accuracy of GPS by flying and recording data between FAA recognized points (ie, any VORs, any NDB's, any Intersections, 'any Airports).

#### EXAMPLE:

Flight test from DuPage Airport or point of departure on the airport (Waypoint O) and fly direct to the DuPage (DPA) VOR (Waypoint 1) intercepting a 176 degree course to the Joliet (JOT) VOR (Waypoint 2). Fly over the Joliet VOR and make left traffic to turn back on course (316 degrees) to fly direct to the Rockford (RFD) VOR (Waypoint 3). Fly over the Rockford VOR and make left traffic to intercept an on course heading of 117 degrees to fly direct to the DuPage VOR (Waypoint 1).

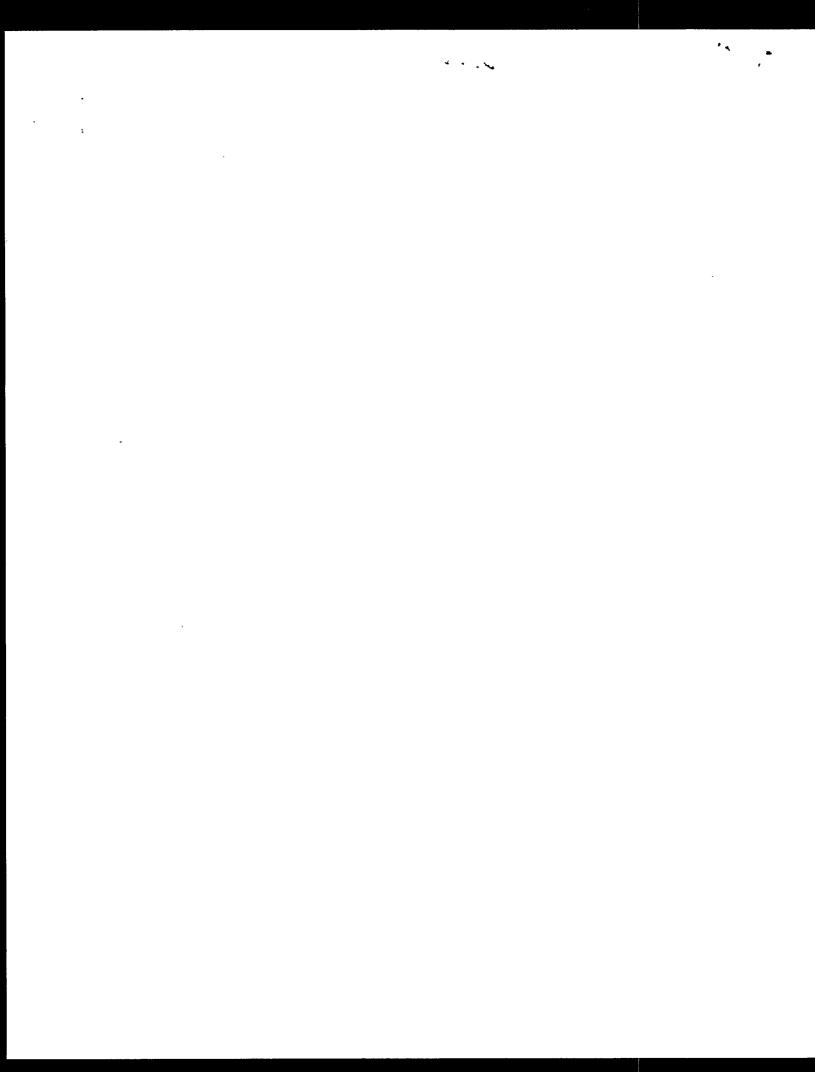
- Check-point information
  a. DuPage (DPA) 108.4 N 4153.4 W08821.0
  b. Joliet (JOT) 112.3 N 4132.8 W08819.1
- c. Rockford (RFD) 110.8 N 4213.5 W08912.0

#### EXAMPLE;

RECORD AND VERIFY:

DPA - JOT	_17	E	NM 2	0.8	Degree
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υ	15 t.	L/R of	course	0.1	им
JOT - RFD	31	17 -	ММ	5'6.5	Degree
Over RFD D				NM+	
บ	ist.	L/R of	course_	ಲ	NM
RFD - DPA	4	7,8	1414	118	Degree
Over DPA D				+MN	
ย	ıst.	L/R of	course_	0	им

Pilot Name WICCIAM N. MELER	Alicialt Registration N 600ZE
Pilot License # 205722 1	
Pilot Signature Meur	Date 6/12/76
	Custome: Rose Packing
Pilot Signature Diffeer	Customer Rose Packing



US Department of Transportation Federal Aviation Administration

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

Form Approved OMB No. 2120-0020

For FAA Use Only

Office Identification

DPA-FSDOM

INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 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. 1421). Failure to report can result in a civil penalty not to exceed \$1,000 for each such violation (Section 901 Federal Aviation Act of 1958).

10	each st	ich violation (Sec	CIIO	n 901 Federal Avia	tion Ac	et of 1	1958).					1			
		Make						Model							
1. A	ircraft	Grumman	1					G-21	<u> </u>						
^		Serial No.	-						ity and Registratio	n Mark					
		B-100						N 600							
				on registration ce	rtificate	e)			(As shown on regi		ertificate)				
2. O	wner	Rose Pa	ıck	ing				B .	. Barrington						
							Barrington, IL 60010								
								<u> </u>							
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ate						Sign	nature of Autho	rized Indi	vidual /						
	11	June 1996		<del></del>		1	víd H. Křě	7	/ AKra		<u>``</u>				
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1	l June	1996		NF2R029L	<del></del>	St	teven J. C	arton	ALC)						
	_		_												

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.)

Removed Northstar M1 Loran.

Installed Northstar M3 Global Positioning System in accordance with Installation Manual P/N GM610, Rev. A dated March 1, 1994 and also in accordance with similar installation per STC #SA00220NY.

Installation was done using steering information to the #1 Nav Indicator (Bendix/King KI-525A HSI) interfaced with S-TEC System 50 Autopilot using switch and relay. Indicator light illuminates when information is presented on Nav #1 or GPS. If ILS frequency is selected on Nav #1, HSI automatically reverts to Nav #1.

Existing Aeromech 8140B Encoding Altimeter is interfaced to the Northstar M3. Static system has been tested in accordance with FAR 91.411 and FAR 91.217.

Northstar AN-120 GPS Antenna has been installed and is located at station 155.00" aft of datum on the top fuselage and meets the requirements of TSO C-129.

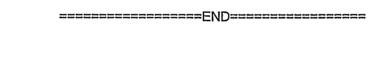
A post installation checkout was performed in accordance with Bendix/King Installation Manual. Transmit check was completed on both #1 and #2 comms for the following frequencies: 121.125, 121.150, 121.175, 121.200, 121.225, 121.250, 131.200, 131.225, 131.250, 131.275, 131.300, 131.325, and 131.350 MHz. Also, interference checkout between GPS and VOR has been performed.

This equipment has been ground checked and functions properly. There were no adverse effects with any of the other aircraft systems.

System has been placarded, "GPS NOT APPROVED FOR NAVIGATION PURPOSES" and is pending successful test flight for VFR/IFR enroute and terminal operation approval.

All work was done in accordance with AC43.13-1A Chapters 11, 13, 15 and AC43.13-2A Chapters 2 & 3 and AC20-138 and TSO-C129 (Class A2) and also in accordance with FSAW 94-32A.

Weight and Balance has been computed and entered in appropriate aircraft paperwork.





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

Form Approved OMB No. 2120-0020

For FAA Use Only

Office Identification DPA-FSDQ

1110

INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 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. 1421). Failure to report can result in a civil penalty not to exceed \$1,000 for each such violation (Section 901 Federal Aviation Act of 1958).

for e	each suc	h violation (Se	ection	n 901 Federal Avia	tion Act	t of 1	958).		•	•	•			
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2. Ow	ner	Rose I	Pacl	king				65 S. Barrington Road						
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11	ave been	i made in acco	orgar	correct to the best	ements	Of Pa	a#743 mithells	i. Federai	Aviation Regulation	ns and th	at the inform	ation		
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7540.06			x	<u> </u>		Cari	ada Airworthines	s Group		·				
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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.

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8. Description of Work Accomplished

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

Installed Eventide Argus 7000 Moving Map Display. This Argus 7000 installation was accomplished per manufacturer's installation manual P/N 5003, Rev. 03.06 dated 07-08-94.

Data from Northstar M3 GPS Navigator, RS-232 input port interfaces to the Argus 7000 for its navigation information. The heading information is supplied by Bendix/King KCS-55A Compass System.

	sading information is supplied by Dendizating 1000-007 Compact Cystem.
The Argus 7000 is n	not approved for IFR use and is not intended as a source of navigation.
This equipment has any of the other airc	been ground checked and functions properly. There were no adverse effects with craft systems.
All work was done in AC20-121A Append	n accordance with AC43.13-1A Chapter 11, 13, 15 and AC43.13-2A Chapter 2, 3 and lix 1 paragraph 3.
Weight and Balance	e has been computed and entered in appropriate aircraft paperwork.
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FB-26 1996

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

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

Form Approved Budget Bureau No. 04-R060.1

FOR FAA USE ONLY

OFFICE IDENTIFICATION

	(Airframe	e, Powerplant, P	rope	ller, or Appliar	ice)		) 		
INSTRUCT	FIONS: Print of ions and dispos	r type all entries. Se	e FAR	43.9, FAR 43 Appe	endix B, an	d AC 43.9-1 (c	or subsequent	revision	thereof)
	MAKE	Grumman			MODEL	G-21A			
1. AIRCRAFT	SERIAL NO.	3-100			NATIONAL	ITY AND REGI	STRATION ,M	ARK	
	NAME (As show	wn on registration certi	ficate)		ADDRESS	(As shown on real	istration certi	ficate)	
2. OWNER.	   Willia	ım R. Rose			15 W. South	Mundhan Barring	k Rd. ton II.	6001	0
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Februa	ry 26,19	96		SIGNATURE OF AL	JTHORIZED	INDIVIDUAL			
		7. /	APPROV	AL FOR RETURN TO	SERVICE	pour,		· · · · · · · · · · · · · · · · · · ·	
Pursuant to the Administra	e authority give	en persons specified l ral Aviation Administ	below,	the nois identified	:- : /	vas inspected in	the manner	prescribe	d by
1 1.	T, STANDARDS	MANUFACTURER .	Х	INSPECTION AUTHORIZA	TION	OTHER (Specify)			
FAA D	ESIGNEE	REPAIR STATION		CANADIAN DEPARTMEN OF TRANSPORT INSPECT OF AIRCRAFT					
ATE OF APPRO EJECTION Februar		CERTIFICATE OR DESIGNATION NO 6AP1392773IA	).	SIGNATURE OF AL	THORIZED	INDIVIDUAL			

Section 1 para. 1,2 Section 8 Spara. 1,2 Grumman Structual Repair Manual Nav aer 01-85VA-3 Para, 127 Through 136 A3.13-1A Change 3 Section 1 Chapter 3 .A]] work was done in accordance with; Left Elevator. The followang surface was inspected and prepared for Ceconite #101 fabric covering: As per STC 1351 WE February 26,1996 · 10009N · craft nationality and registration mark and date work completed.) 8. DESCRIPTION OF WORK ACCOMPLISHED (If more space is required, attach additional sheets. Identify with airapplicable airworthiness requirements. An alteration must be compatible with all previous alterations to assure continued conformity with the Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record.

END

Ceconite Procedure Manual # 101 Rev. 12

ADDITIONAL SHEETS ARE ATTACHED

4 U.S. GPO: 1981 - 775-332/47

### DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

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

Form Approved Budget Bureau No. 04-R060.1

FOR FAA USE ONLY

OFFICE IDENTIFICATION

DPA-FSDO

INST for in	RUCT	IONS: Print or	type	all entries. See lof this form.	AR 4	3.9,	FAR 43 Appe	ndix B, and	AC 43.9-1 (or s	subsequent r	evision th	ereof) -		
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1. AIR	CRAFT	SERIAL NO.	B-1	.00				NATIONALIT	Y AND REGIST	RATION MA N600ZE	RK			
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An alteration must be compatible with all previous alterations to assure continued conformity with the Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record.

Left Wing Panel Left Aileron prepared for Ceconite 101 fabric covering: the following surfaces were inspected and As per STC 1351 WE 1995 14, 1995 **₩**2009N craft nationality and registration mark and date work completed.) 8. DESCRIPTION OF WORK ACCOMPLISHED (If more space is required, attach additional sheets. Identify with airapplicable airworthiness requirements.

Para. 127 through 136 AC 43.13-1A Change 3, Chapter 3 Section 1 All work was done in accordance with;

para. 1,2 Section 8 para. 17 Section 1 Crumman Structural Repair Manual Wavaer 01-85VA-3

Ceconite Procedure Manual #101 Rev. 12

Right Wing Panel Right Aileron

☐ ADDITIONAL SHEETS ARE ATTACHED

EVY YC 15-4906

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į.		FEDERAL AVIATION				ļ	Form Approved Budget Bureau	No. 04-R	060.1
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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 compledd.)

N600ZE

SEPT 28, 1992

- Installed Shadin digital fuel flow indicator and totalizer in accordance with STC SE318GL.
- The following components were installed;
  - 910522 Indicator
  - 660526 412250 Transducer
  - Harness
  - 546101 Seal
- 3. All work done in A/W Shadin Manual DGFLO521. MNL, and the procedures set forth in AC 43.13-1A CH 11 SEC 2 Para 429

  CH 14 SEC 2 Para 708,709,715

AC 43.13-2A CH 11 Para 213.

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(Alcheme, Sungiplied, Properly, or Appliancy)

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C FAA AC 72-4906

United States of America

Department of Transportation—Kederal Aviation Administration

## Supplemental Type Certificate

Number SE318GL

This certificate, issued to

Shadin Company Inc. 6950 Wayzata Blvd./Suite 221 Minneapolis, MN 55426

cortifies that the change in the type design for the following product with the limitations and conditions Type Certificate No. 5E-1.

therefor as specified hereon meets the sirverthiness requirements of FBXX

XXXXX

Regulations.

Original Product - Trypo Cortificato Number:

Pratt and Whitney

Make:

Model: R985-5, -13, -17, -19, -23, -25, -27, -39, -39A, -48, -50, -AN-1, -AN-3, -AN-1N1, -AN-2, -AN-4,

-AN-5, -AN-6, -AN-6B, -AN-8, -AN-10, -AN-12,

-AN-12B, -AN-14B, -AN-14BM1

Installation of a Fuel Flow Transducer in accordance with Shadin Report Number 4066 dated June 4, 1984 or subsequent FAA approved revision.

Limitalisms and bunditions. This approval should not be extended to other engines of this model that incorporate any other previously approved modification, unless it is determined that the interrelationship between this change and any other previously approved modification will introduce no adverse effect on the airworthiness of these engines.

This cortificate and the supporting date which is the basis for approval shall recover in effect until surrendered, suspended, rowked, or a termination date is uthorwise established by the Administrator of the

Federal Ariation Administration

Sale of application: June 4, 1984

Sale ressered

Date of issuance:

September 6, 1984

Tale unended Idirection of the Administrator

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Manager, Chicago Aircraft Certification Office

Central Region, ACE-115C

(Title)

CONTRACTOR OF THE PARTY OF THE

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

JUN 1 8 1992

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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.)

JUNE 15, 1992

N600ZE

AIRCRAFT'S RUDDER INSPECTED AND PREPARED FOR FABRIC COVERING IN A/W AC43.13-1A, CH3, SECTION 1, PARAGRAPH 127 THROUGH 136.

INSTALLED CECONITE 101 FABRIC AS PER STC SA1351WE AND CECONITE PROCEDURE MANUAL  $\sharp$ 101, REV 11.

END

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ADDITIONAL SHEETS ARE ATTACHED

C FAA AC 72-4906

± U.S. GPO: 1981 - 775-332/47

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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.)

September 23,1991

N 600 ZE

Installed new forward keel part No. 12003-32 from hull station #1 to #16.5. All mating and exposed surfaces corrosion proofed by using Dupont Alodine process and then applying a Dupont Zinc Chromate Primer. Watertight integretity insured by use of proper sealing compound and testing after repair.

All work was performed in accordance with the procedures contained in:

Grumman Structural Repair Manual Navaer 01-85VA-3 Sec. 1, Sec. 4 Figures 67,107

Ac 43.13-1A CH2 Sec. 3 Para. 94,100 CH6 Para. 251

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ADDITIONAL SHEETS ARE ATTACHED

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FAA AC 72-4906

÷ U.S. GPO: 1981 - 775-332/4

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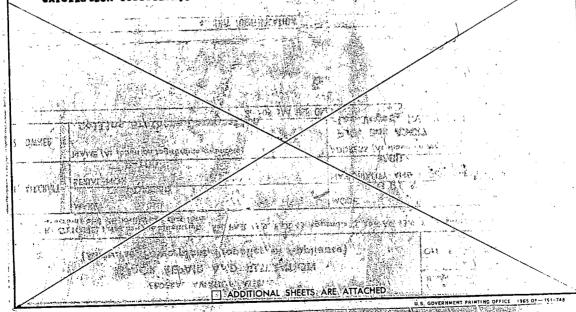
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- 8. DESCRIPTION OF WORK ACCOMPLISHED (If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)
- Picture window installation in accordance with McKinnon Enterprises Inc. drawing MPD 5100 and Engineering Order No. 1 & No. 2 as authorized by STC SA101WE.
- Installation of Rudder Aerodynamic Balance in accordance with McKinnon drawing MPD 4003"B" as authorized by STC SA4-1467 (This item completes the intent of STC SA4-1467 which was accomplished elsewhere).
- Installation of Goose G-21A water rudder per B.N.P. Airways Ltd drawing No. 1648. (DOT Approved April 5, 1961).
- Installation of position/navigation lights in wing tip retractable floats in order to complete intent of STC SA4-682 which was accomplished elsewhere.
- Installation of two additional Aft facing passenger seats between hull stations 16 & 17 in accordance with drawing FD 1001.
- Installation of Co-pilot control wheel in accordance with Grumman drawing 12750.
- Wing centre section rear lower spar cap at station 16 (RH side) repaired as per Viking Air approved drawing GCS=001. (DOT approval No. P80/003)
- Bulkhead Web, stn 151, IH wing, repaired per Grumman Manual 01-85V-3, figure 9 (due to exfoliation corrosion).
- Bulkhead Web, stn 151, RH wing, repaired per Grumman Manual 01-85V-3, figure 9 (Due to exfoliation corrosion).
- Main longeron IH side of fuselage between stn's 16 and 24 replaced (Due to 10. exfoliation corrosion)
- Main longeron RH side of fuselage between stn's 16 and 23 replaced (Due to exfoliation corrosion).



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8. DESCRIPTION OF WORK ACCOMPLISHED (If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.) This Loran C-installation was accomplished in accordance with previously approved data "for duplication" for Joliet-Avionics, Inc. Certificated Repair Station No. 3159, per letter from AGL-GADO-3 dated July 11, 1985 and the original approved installation is on file at this repair station on much Installed Northstar M- Loran C Receiver in accordance with Installation Manual P/N GM-295 dated 1986 Revision Due to the desire in the land Installation was done using no steering information. Aircraft placarded "VFR conly not to be used for primary navigation." All work was done in accordance with AC43.13-1A Chapter 11, 13 & 15 and and AC43.13-2A Chapters 2-& 3 and AC20-121 Appendix 1 Paragraph 3. Weight and Balance was computed and entered in appropriate aircraft paperwork. -THE END-JAKE JEFFEL wecessage cheresessage the destroyed in them I above wester 4. HHIT TOOKTI HUSTION Bring la Barr 08/464 NAME A thrip parte, tuhtalish tarillitus ADJURACE OF B-100 200 No SERIAL NO. HAMONA भनेक्स 7. 311 Grimma WWKE NaTho.CTP.INS "mion use all games. Reclaims and as appendix E, 20d &C.

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FAA AC 72-4906

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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 air craft nationality and registration mark and date work completed.)

This 337 documents the previously installed auxillary battery charge and cabin light system consisting of a Lambda Model LM E28 power supply, S/N B96028, and associated wiring and circuit breakers. A circuit diagram and installation drawing is attached.

The units is located on a .063 aluminum plate bolted directly to the two hull web members aft of station 7. Controls and power supply are on the right hand side of the aircraft facing the walkway to the bow compartment. 110 volt input cord is stowed in the bow compartment.

Installation and wiring done in accordance with manufacturer's instruction manual and data set forth in AC 43.13-1A chapter 11 sections 2, 3, &7, and AC 43.13-2A chapter 1.

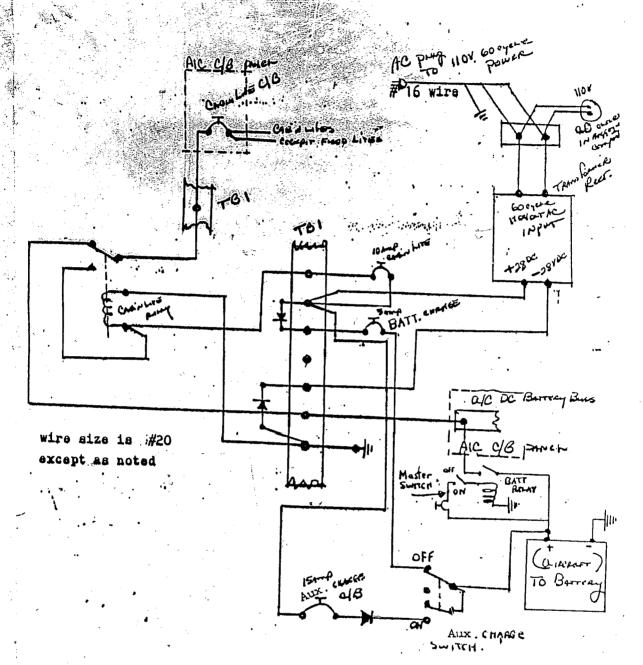
Aircraft equipment list and weight and balance data revised to reflect this change.

The operation of this unit is strictly as an auxillary battery charge and cabin light system and can not be activated in flight. This system is electrically separate from the aircraft's system and can not inadvertantly be used during flight.

Pilots information manual and aircraft maintenance manual contain pertinent data for operation and maintenance. A placard is installed reading, "To be operated only by qualified maintenance personnel."

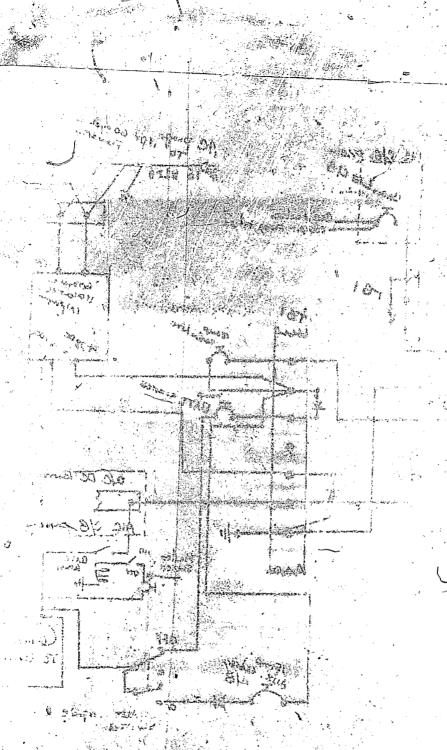
ADDITIONAL SHEETS ARE ATTACHED

U.S. G.P.O. 1972/720-694/545/1303



Auxillary BATTERY CHARGE AND AUX. CABIN LIGHT SYSTEM AS INSTALLED ON GRUMMAN GOOSE N600ZE, s/n B-100 Date of 337, June 3,1986

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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.) Inspected previously installed KNS 80 R-Nav system and KI 525 indicator. Equipment was installed TAW King radio installation manual. Indicator is approved for use with the KNS 80 by service memo 274. The Installation conforms to guidelines in AC 43.13-2, chapters 1. 2. and 3. Aircraft-weight and balance reflects this change. System operates TAW King installation manual and does not interfere with any other system . Aircraft equipment list revised. R-Nav is placarded for "VFR USE ONLY". 6. COMPOSANTY SYADILLY Establanternion PLOISER AVIATEM THE T GANG we the terms or appropriate the second Y'YIMH Anisables of the form of the state of the st

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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. craft nationality and registration mark and date work completed.)

This 337 form documents the previously installed Jasco alternator system on the Pratt 8 Whitney R985-AN3 right engine.

Examination of the right engine alternator installation shows it is installed identical to the left engine alternator instal-

lation.

Alternator selection is controlled by one three position selector switch, left alternator, right, alternator, or center off.

Only one alternator cam be selected at a time form.

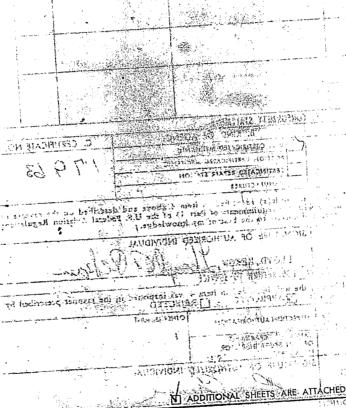
The alternator linstallation is in accordance, with Skytronics that alternator in the drawings 50.24 and 50.16, and shown as a dual installation in the drawing dated time 26, 1986 for this aircraft.

drawing dated time 26, 1986 for this aircraft.

System tomponents Jasco model 7555T alternators, right engine syn 7911-0789, left engine s/n 7911-0790, Skytronics voltage controllers, right 7911-2343, left s/n 7911-2342.

The left engine installation was field approved on a 337 form dated June 17,1975. lation.

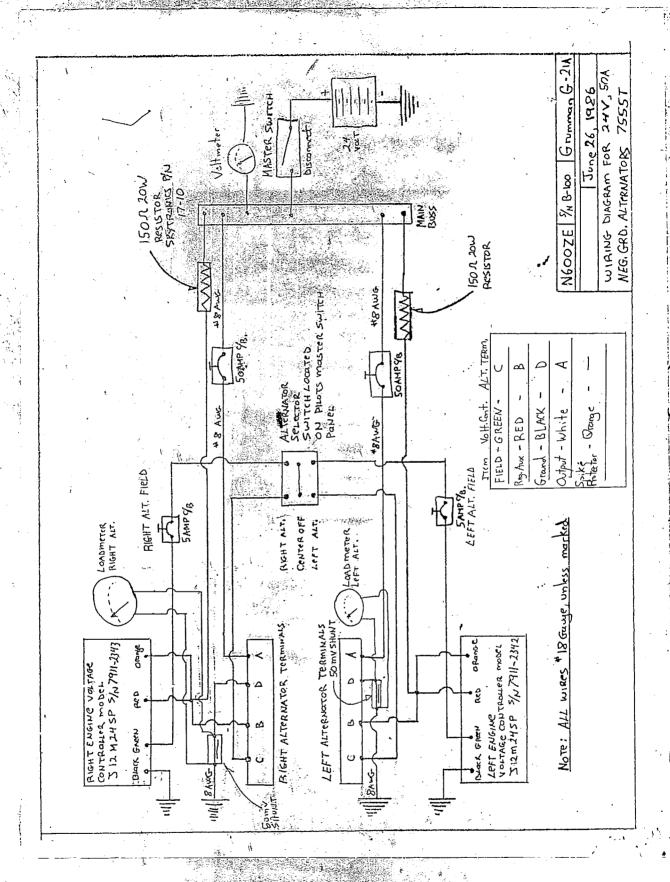
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71.5. GOVERNMENT PRINTING OFFICE: 1965 OF-761-748



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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. craft nationality and registration mark and date work completed.)

An electric bilge pump system was previously installed by another agency on this aircraft. This 337 documents that अन्तर नेतृत्व दर्भ installation.

The system consists of 7 Rule model 750 pumps and float operated switches. The entire system is protected by two loamp circuit breakers. Wiring diagram attached. The control panel and wiring box for the system is located on the stringer above the co-pilots window. Circuit breakers and switches are labeled as to operation and placard installed, " Elec. Bilge Pump System- Manual/Auto". The pumps and float switches are located at the following points in the hull:
#1 1 each fwd of station 7

each aft of station 7 each on station 12 1 each fwd of station 16 1 each fwd of station 17 1 each fwd of station 20 each fwd of station 27

All are installed in a similair manner in accordance with the enclosed drawing and AC 43.13-1A, Chapter 2, section 3. Corrosion preventative measures taken as outlined in AC 43.13-1A, Chap. 6, par 251. All wiring and lacing appears to have been done in accordance with AC 43.13-1A, Chap 11, par 446.

Aircraft equipment list and weight and balance are

revised to include the above installation. TO CENTRAL BASETERNAL T

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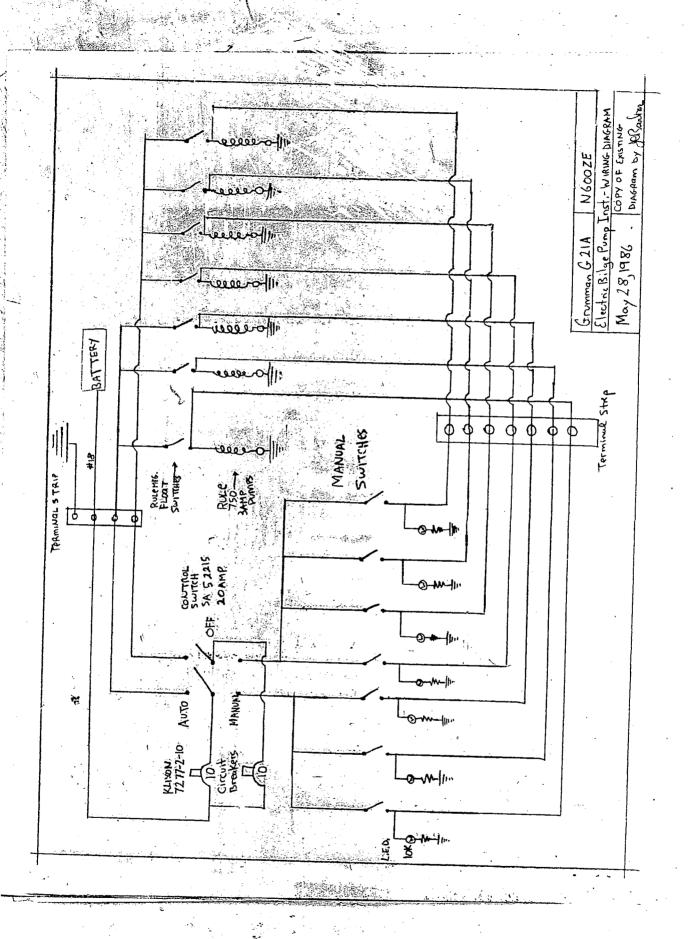
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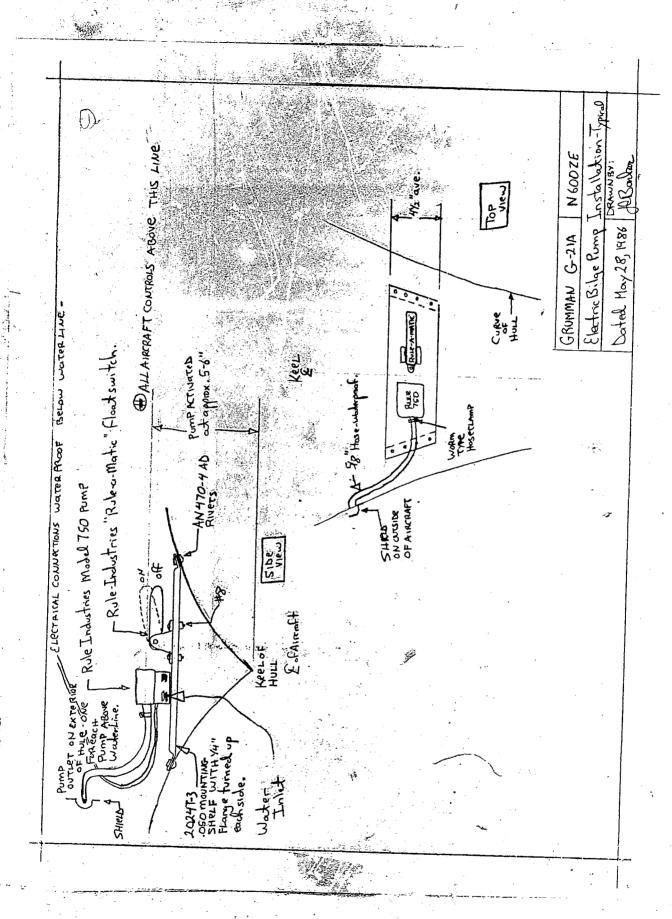
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ADDITIONAL SHEETS ARE ATTACHED

★U.S. GOVERNMENT PRINTING OFFICE: 1977-77 021/344





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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.

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FAA Form 337 (7-67)

DATE OF APPROVAL OR REJECTION Jan. 18, 80

CERTIFICATE OR DESIGNATION NO.

(8320)

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.)

Jan. 18, 1980 Grumman G-21A N 88U S/N B-100

- 1. Complete overhaul of airframe.
  2. Repaired damaged nose Sta. 1-16.

- 3. Installed all new bottom skins chines and keels.
  4. Replaced bottom plate of center wing sealed and slushed tanks.
  5. Replaced four U channels between four main landing gear fittings.

- 6. Installed complete overhauled landing gear.
  7. Recovered control surfaces with Geconite 101.
- Installed new interior including 4 FS100 seats per SA1969WE. Installed new set Cleveland G-21A brakes conversion kit
- 199-65 per STC SA99GL.
  Installed overhauled wings with McKinnon retract float modification STC SA4-1467.
  Installed 6100 Continuous C 10.
- Installed fire extinguisher CF2D.
- 12. Installed overhauled engines R985AN3.
  13. Installed new Hartzell props HC-B3R30-2E Blade R10152-5.5.
  14. Installed new cables, wiring and plumbing.

- 14. Installed new cables, wiring and plumbing.

  15. Replaced hand wobble pump with electric. (see schematic)

  16. All repairs done on aircraft in conformance with Grumman manual and AC-43-13-1.
- AD Notes checked for compliance-46-38-1,49-16-1,50-15-1,53-21-2,53-24-1,63-27-2,67-6-4,71-12-3,73-12-6,79-2-3.
- 18. All overhauled accessories installed.

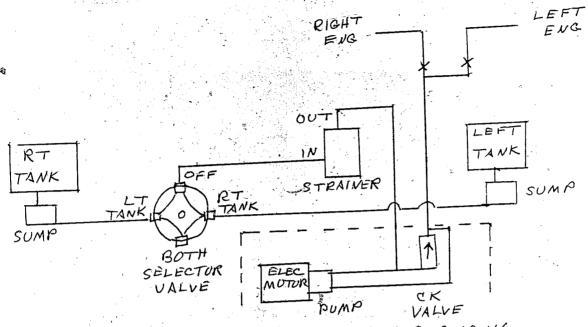
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19. All overhauled, new, or checked instruments installed.

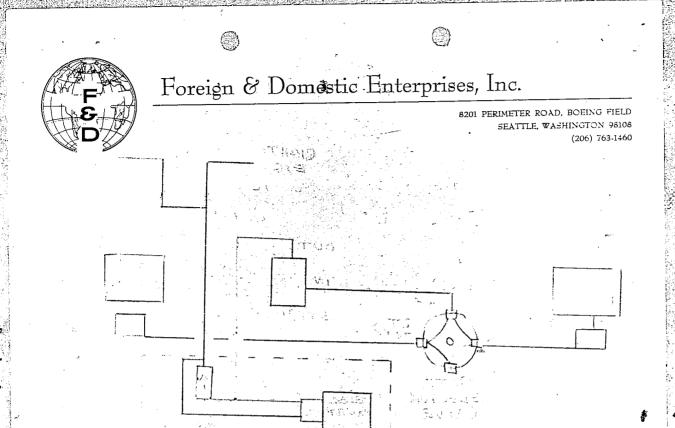
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INSTALLATION OF ELEC PUMP REPLACING WOBBLE PUMP G-21A
N88U SIN B-100



FAA Form 337 (7-67)

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D. I certif	fy that the repair	and/or alteration in been made in accor furnished herein is	nade to t	he unit(s) iden	itified in iten	n 4 above and 43 of the U.S. I mowledge.	described of Federal Avia	n the rev	erse or ilations
DATE	Jan	¥.	,	SIGNATURE OF	AUTHORIZE	INDIVIDUAL			
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Pursuant t	to the authority givenistrator of the Fed	ven persons specifie eral Aviation Admir	d below,	the unit dentition and is	red in item 4		in the mann	ner prescri	Dea DV
F.	AA FLT. STANDARDS	MANUFACTURER	$\times$	INSPECTION AUTHO		OTHER (Specify)	ng mga n		
BY	AL DESIGNEE	REPAIR STATION	*	CANADIAN DEPART OF TRANSPORT IN OF AIRCRAFT	SPECTOR	Jest Cart	<u> </u>		
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(B320)

t cutter.

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 sho	eets. Identify with air
	craft nationality and registrati	on mark and date work completed.)	

1. Replaced Right Landing Gene, upper of lower Draw links with over moules items

REMANUL By VIKING AIR LTD, SIDNEY,

B.C. AI 99.

2. Repairen RT wink tip by manuf stiffmen section to match our item and Repairing Fur Damageo Section.

Replaces skin on lenome Egge of Top
of Wing Tip.

3. Repainer Rt Float INBO Rem Section with skin Doublen of flush fillers.

SEAlen Float INTERIOR.

SECTION 3 & GRUMMAN G-21 MAINTENANCE

CAKUMANAN CO

ADDITIONAL SHEETS ARE ATTACHED

U.S. G.P.O. 1972/720-694/545/1303

DEPART OF TRANSPORTATION
FEDERAL TION ADMINISTRATION

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

Form Approved Budget Bureau No. 04-R060.1

FOR FAA USE ONLY OFFICE IDENTIFICATION

AL-ACDO-31

INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form.

1. AIRCRAFT	MAKE GHUANAN	MODEL G-21	<b>\$</b>
	SERIAL NO. B-100	NATIONALITY AND REGISTRATION MARK	
2. OWNER	NAME (As shown on registration certificate) KODIAK WESTERN ALASKA RIFLINES, INC.	ADDRESS (As shown on registration certificate) = P.O. BOX 2457 RCDIAK, ALASKA 99515	
	3. FOR FAA USE ON	LY	

"The data identified herein complies with the application requirements and is approved for the above described aircraft, sub ty inspection by a person authorized in FAR 43, Section 43.7. DATE

	4. U	NIT IDENTIFICATION		5. TYPE		
TINU	MAKE	MODEL	SERIAL NO.	REPAIR	ALTER- ATION	
AIRFRAME	***************************************	(As described in item 1 above)	*************		xx	
POWERPLANT				•		
PROPELLER		252	-			
APPLIANCE	TYPE  MANUFACTURER					
	<u> </u>	/ CONFORMATY STATEMENT	<u> </u>			

CONFORMITY STATEMENT A. AGENCY'S NAME AND ADDRESS B. KIND OF AGENCY C. CERTIFICATE NO. XX U.S. CERTIFICATED MECHANIC HARRY L. ACOR 1A-1174905 FOREIGN CERTIFICATED MECHANIC BOX 2457 CERTIFICATED REPAIR STATION KODIAK, ALASKA 99615 MANUFACTURER

D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 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.

JULY 30, 1975

SIGNATURE OF AUTHORIZED INDIVIDUAL

7. APPROVAL FOR RETURN TO SERVICE

Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is APPROVED REJECTED

		FAA FLT. STANDARDS	MANUFACTURER	ĸ	INSPECTION AUTHORIZATION	OTHER (Specify)
BT	FAA DESIGNEE REPAIR ST	REPAIR STATION		CANADIAN DEPARTMENT OF TRANSPORT INSPECTOR OF AIRCRAFT		
REJEC	CTIO	APPROVAL OR 30, 1975	CERTIFICATE OR DESIGNATION NO. LA-1174905		SIGNATURE OF AUTHORIZED	OINDIVIDUAL

FAA Form 337 (7-67)

(8320)

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 recuirements.

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

N-88U

JULY 30, 1975

- Removed streamline flying wires from inboard and outpeard side of wing floats.
   Tensil strength 4200 pounds.
- Installed 3/16" stainless cables with a tensil strength of 4250 pounds on inboard and outboard sides of wing floats.
  - a. End fittings are MS 21259 and adapt to the exsisting fittings on the wing.
  - b. Center float streamline wires remain the same as factory original.

END

3. No change in weight and balance. .



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ADDITIONAL SHEETS ARE ATTACHED



THE DESIGNATION OF THE PARTY PARTY.

U.S. G.P.O. 1972/720-694/545/1303

DEPARTM OF TRANSPORTATION
FEDERAL JON ADMINISTRATION

#### Form Approved Budget Bureau No. 04-R060.1 FOR FAA LSE UNLY OFFICE IDENTIFICATION AL-ACDO-31

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

INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. MAKE ' GRUMMAN MODEL G-21

1. ALRCRAFT NATIONALITY AND REGISTRATION MARK SERIAL NO ADDRESS (As shown on registration certificate)
P.O. BOX 2457 NAME (As shown on registration certificate) KODIAK WESTERN ALASKA AIRLINES, INC. 2. OWNER KODÍAK, ALASKA 99515

3. FOR FAA USE ONLY

"The data identified herein complies with the application requirements and is approved for the above described aircraft, inspection by a person authorized in FAR 43, Section 43.7."

DATE 8-15-15

4. UNIT IDENTIFICATION 5. TYPE ALTER-UNIT MAKE SERIAL NO. MOITA XX -AIRFRAME POWERPLANT PROPELLER TYPE APPLIANCE MANUFACTURER

CONFORMITY STATEMENT C. CERTIFICATE NO A. AGENCY'S NAME AND ADDRESS B. KIND OF AGENCY CERTIFICATED MECHANIC HARRY L. ACOR FOREIGN CERTIFICATED MECHANIC LA-1174905 BOX 2457 CERTIFICATED REPAIR STATION KODIAK, ALASKA 99615 MANUFACTURER

D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 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.

JULY 30, 1975

SIGNATURE OF AUTHORIZED INDIVIDUAL HARRY LA ACOR

7. APPROVAL FOR RETURN TO SERVICE

Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manuer prescribed by the Administrator of the Federal Aviation Administration and is A APPROVED REJECTED

OTHER (Specify) FAA FLT. STANDARDS INSPECTION AUTHORIZATION MANUFACTURER BY CANADIAN DEPARTMENT

FAA DESIGNEE PEPAIR STATION DATE U. ... PEJECTION 0, 1975 DATE OF APPROVAL OR

CERTIFICATE OR DESIGNATION NO. OF AIRCRAFT

HARRY L. JACOR CO. T. INDIVIDUAL

TRANSPORT INSPECTOR

### MOTICE

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

N-88U

JULY 30, 1975

- Removed streamline flying wires from inboard and outboard side of wing floats.
   Tensil strength 4200 pounds.
- 2. Installed 3/16" stainless cables with a tensil strength of 4290 pounds on inboard and outboard sides of wing floats.
  - a. End fittings are MS 21259 and adapt to the exsisting fittings on the wing.
  - b. Center float streamline wires remain the same as factory original.
- 3. No change in weight and balance.

END



ADDITIONAL SHEETS ARE ATTACHED



U.S. G.P.O. 1972/720-694/545/1303

DEPAR	( ) OF 1	RANSPORTATION ADMINISTRATION
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Form Approved
Budget Bureau No. 04-R060.1
FOR FAA USE ONLY

	MAJOR	REPAIR AND	, ALI	or Applier	icel	OFFICE	ADEQUEC S	_			
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r mstracti	MAKE				MODEL						
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AIRCRAFT	SERIAL NO.	_	:* ·		NATIONALIT						
	B-100		orto)			shown on registr	ation certific	cate)			
ounich.	NAME (As shown or	registration certific	uiej		1				1615		
OWNER	Kodiak Wester	rn Alaska Ai	line	s, Inc.		2457, Kod	lak, Ala	aska 9	9013		
			3.	FOR FAA USE OI	VLY						
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A	. AGENCY'S NAME	AIND ADDRESS			CATED MECHANIC						
	H. Ross				RTIFICATED MECH						
P.O.	Box 2312	C1 E	-	CERTIFICATE	11980	3023					
	ak, Alaska 99			MANUFACTU		( - h and	described (	on the re-	verse of		
D. I cert	ify that the repair a ments hereto have b	nd/or alteration r een made in accor	nade to dance v	the unit(s) ide	entified in item ments of Part	13 of the U.S.	Federal Avi	ation Reg	ulations		
and th	ments hereto have b	furnished herein is	true a		F AUTHORIZED						
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		7	. APPRO	VAL FOR RETUR	TO SERVICE	<del></del>			ibad bs		
Pursuant	to the authority giv inistrator of the Fede	en persons specifie	d belov	v, the unit iden n and is 🕱 A	tified in item 4 PPROVED [	REJECTED	in the man	ner prescr	1000 07		
	FAA FLT. STANDARDS	· ·		INSPECTION AUTI		OTHER (Specify)					
	INSPECTOR :	MANUFACTURER	<u> </u>	CANADIAN DEPA							
BY	FAA DESIGNEE	REPAIR STATION	-	OF TRANSPORT	INSPECTOR						
DATE OF	APPROVAL OR	CERTIFICATE O	₹	SIGNATURE C	OF AUTHORIZE	D INDIVIDUAL	•				
DAIE UF		DESIGNATION		Harry L	. 2/	cor					
REJECTION		1A1174905		Harry L.	Acor	<u> </u>			(8220		
	e 17, 1975								(0320		
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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.)

N-8811

June 17, 1975 EHRE TO LIGHT THE

- Aircraft Disassembled for inspection
  - Wing Removed a.
    - Center section and plates removed ъ.
    - c. All controls removed
      d. Engines removed

    - e. Firewalls removed
    - rirewalls removed
      Landing gear removed
    - g. Flight control system removed
- Airframe stripped and cleaned of cromate. All repairs done as per Grumman Structual Repair Handbook and AC-43-13-1 and good maintenance practice.
- Aircraft reassembled
  - a. Rebuilt wings installed-
  - New center section end plates installed, fuel tanks resealed b.
  - Overhauled flight control surfaces installed.
  - d. Control system overhauled, cables and tubes replaced, new bearings installed.
  - Firewalls overhauled and reinstalled
  - Engine mounts overhauled and reinstalled.
  - Landing gear system overhauled and replaced as necessary.
  - h. All electrical components overhauled, wiring replaced as necessary
  - Engines reinstalled 🍖
  - Aircraft primed and painted
- Aircraft weighed this date.

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OF TRANSPORTATION DEPART FEDERAL ATTATION ADMINISTRATION

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

Form Approved
Budget Bureau No. 04-R060.1 FOR FAA USE ONLY

OFFICE IDENTIFICATIONDO-31

INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. MODE MAKE G-21A GRUMMAN NATIONALITY AND REGISTRATION MARK

1. AIRCRAFT SERIAL NO. N-88U B-100 ADDRESS (As shown on registration certificate) NAME (As shown on registration certificate) 2. OWNER P.O. Box 2457, Kodiak, Alaska 99615 Kodiak Western Alaska Airlines, Inc. 3. FOR FAA USE ONLY

The data identified herein complies with the applicable airworthiness requirements and is approved for the above described aircraft, subject to conformity inspection by a person authorized in FAR 43, section 43.7.

JUN 2 0 1975 Signature Date 4. UNIT IDENTIFICATION 5. TYPE ALTER REPAIR UNIT HOITA AIRFRAME XX POWERPLANT 4.15-PROPELLER W. 51. jr. APPLIANCE MANUFACTURER CONFORMITY STATEMENT

C. CERTIFICATE NO B. KIND OF AGENCY A. AGENCY'S NAME AND ADDRESS U.S. CERTIFICATED MECHANIC Fred H. Ross FOREIGN CERTIFICATED MECHANIC 1198023 P.O. Box 2312 CERTIFICATED REPAIR STATION Kodiak, Alaska 99615 MANUFACTURER

D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 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.

SIGNATURE OF AUTHORIZED INDIVIDUAL DATE

June 17, 1975

The state of the s

Fred H. Ross

7. APPROVAL FOR RETURN TO SERVICE

Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is APPROVED REJECTED OTHER (Specify)

FAA FLT. STANDARDS INSPECTION AUTHORIZATION MANUFACTURER CANADIAN DEPARTMENT BY TRANSPORT INSPECTOR REPAIR STATION FAA DESIGNEE OF AIRCRAFT SIGNATURE OF AUTHORIZED INDIVIDUAL CERTIFICATE OR DESIGNATION NO. DATE OF APPROVAL OR Than I harry IV. Acor Cuo REJECTION 1A1174905 June 17, 1975

FAA Form 337 (7-67)

(8320)

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 addition craft nationality and registration mark and date work completed.)	nal sheets. Identify with air-
	to a series of the series of t
N-88U June 17, 19	75
3. 550	
1. Installed cargo door on right side of aircraft.	
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a. All work done as per STC SAI-439, and AC-43-13-1 as	
practice.	andree 1 a
b. Installation checked by Bush Craft Mfg. and Repair	during all major
phases of construction.	
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EDERAL	AVIAT	ION	ADMINISTRATION

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

Form Approved Budget Bureau No. 04-R060.1

FOR FAA USE ONLY OFFICE IDENTIFICATION

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INSTRUCT	IONS: Print or ty ons and disposition	pe all entries. See F. on of this form.	AR 4	3.9, FAR 43 Appe	endix B, and	AC 43.9-1 (or		
	MAKE GRU	NAMM	, :	· · · · · ·	MODEL	G-21		
1. AIRCRAFT	SERIAL NO.	.00	•	f .	NATIONALI N-81	TY AND REGIST	RATION MA	RK
o owner	NAME (As shown	on registration certifica	ite)		ADDRESS (A	As shown on regis	tration certifi	icate)
2. OWNER	Kodiak West	ern Alaska Air				ox 2457, Ko	diak, Al	Laska 99615
The det	n identific	herein compli		FOR FAA USE ON				
and is	approved for	the above des	cri	bed aircraft				
	e <b>rson authori</b> IUN 2 0 1975	zed in FAR 43,	, se	ection 43.7.	0	5 . V	_	•
	Date	<del></del> ,		<u> </u>	gnacure	of the in	Wector	<del></del>
		4. UNIT	IDE	NTIFICATION	<del></del>			5. TYPE
זואט		AKE		MODEL		SERIAL	NO.	REPAIR ALTER-
AIRFRAME	*****		s desc	cribed in item 1 ab	ove) ******	**********	₩	xx
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PROPELLER						;		-
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_	Alaska 99615	e e grande	Y-1	CERTIFICATED R			LALI	74905
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June 17,	1075		-	SIGNATURE OF	acoz.	INDIVIDUAL		
oure 17,	1515	7 AD	DDOV	Harry L. F				<del></del> -
Pursuant to	the authority give	n persons specified be	-	the unit identifie		was inspected in	the manner	r prescribed by
the Adminis	trator of the Feder	al Aviation Administr				OTHER (Specify)		
	FLT. STANDARDS PECTOR	MANUFACTURER		INSPECTION AUTHORIZ		Since (openit)		
FAA	DESIGNEE	REPAIR STATION		CANADIAN DEPARTME OF TRANSPORT INSPE OF AIRCRAFT	CTOR			
DATE OF APP REJECTION 17,	1975	CERTIFICATE OR DESIGNATION NO. 1A1174905		SIGNATURE OF A	COL	INDIVIDUAL		=
FAA Form	337 (7-67)					·-··		(8320)

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. DES	CRIPTION OF WORK ACCOMPLISHED (If more space is required, attach additional sheets. Identify with air- off nationality and registration mark and date work completed.)
	N-88U June 17, 1975
	And the Very Land
1.	Removed generator elclipse MBA-2 and voltage regulator from left side of aircraft.
	aircraft.
2.	Installed a 50 amp. Jasco alternator on left engine generator mounting pad.
3.	Installed a solid state regulator PN J-24M-20 with a voltage protector PN SVP-3.
	All parts supplied by Skytronics, Inc.
	The second state of the second
8.	Cooling tube installed from slipstream to alternator.
-	
5.	Installation done as per skytronics STC 2015WE and AC-43-13-1.
6.	Equipment list and Weight and Balance corrected this date.
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	ADDITIONAL SHEETS ARE ATTACHED

# FEDERAL AVIATION AGENCY MAJOR REPAIR AND ALTERATION

Form Approved Budget Bureau No. 04-R060.1

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			Powerplant, Pro				<u> </u>		AL-	E IDENTIFIC -ACDO-31		
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						MANUFACTURER						
attac	cnmen	its nereto nave be	nd/or alteration made en made in accorda urnished herein is tr	nce v	vith	the requiremen	nts of Part 4	l3 of the U.	nd d .S. Fe	escribed or deral Aviat	the reve ion Regul	rse or ations
DATE					SIG	GNATURE OF	AÚTHORIZED	INDIVIDUA	VL			
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Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An afteration 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.)

N-8bu

4/7/71

- Installed seat kit as per STC-SA 1969 WE.
  - all work done in accordance with SA 1969 W blue prints using factor, supplied parts.
    - A/C weighed using Martin Decker scales-New C-G 21.1 END

ADDITIONAL SIMETS ARE ATTACH

ED: AVIATION AGENCY
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# MAJOR REPAIR AND ALTERATION



	(Airtrame,	Powerplant, Pr	opei	ler, or Applian	ice)	Uri	rice IDENTIF	ICATION	
INSTRUCT	TIONS: Print or cy ons and disposition	pe all entries. See	FAR	43.9, FAR 43 Appe	ndix B, an	nd AC 43.9-1 (c	or subsequen	t revision t	hereof)
	MAKE				MODEL	· · · · · · · · · · · · · · · · · · ·			
1 AIRCRAFT		Grumman				G-21A	· <b>-</b> · · · · · · · · · · · · · · · · · · ·		_
The required to compare the re	SERIAL NO.				NATIONALITY AND REGISTRATION MARK				
1. AIRCRAFT    Serial No.   Nationality and registration mark   N88U									
	1.				ADDRESS	(As shown on re	gistration cert	ificate)	
2. OWNER		•		N. A.					
	] H.	all, Helen C.		FOR CAL HEE ON		Kodiak, Ala	iska 9961	.5	
requi	irements and	is approved	mpl for pe	ies with the the above derson authoriz る\ヱリ゚゚゚゙゙ヿ゚゚゙゙゙゙゙゙゙゙゙゚゚゚゚゙゙゙゙゙゙゙゚゚゚゙゙゙゙゙゚゚゚゚゚゙゙゚゙゙゙゙	applica	d aircraft FAR 43, sec	, subject ction 43.	7. 62	<del></del>
					<u> </u>	Signature	UI FAA 1	nspecu	) L.
	I	4. UN	IT ID	ENTIFICATION	·		<u> </u>	5.	TYPE
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				CERTIFICATED RE	PAIR STATIO	и	7		
Kodi	ak. Alaska 9	9615		MANUFACTURER			1		
and that	its hereto have be	en made in accorda	nce v	rith the requirement and correct to the be	ts of Part	43 of the U.S.	described or Federal Avia	n the reve tion Regul	rse or ations
IAIE	•		-1-	SIGNATURE OF A	77075	P ANDIAIDNY	i. u		
	March 3	1972							
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Pursuant to t	the authority giver rator of the Feder					was inspected	in the mann	er prescrib	ed by
INSPE		MANUFACTURER	x			OTHER (Specify)			
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ATE OF APPI	OVAL OR	DESIGNATION NO	) <u>.                                    </u>	SIGNATURE OF A	OTHORIZE	D INDIVIDUAL			-
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AA Form 3	37 (1-65) OBSO	PLETE PREVIOUS ED	ITION	es.		<u>-</u>	0052-025-	8) 0008	320)

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.)
  - Installed electric gear retraction motor and mechanism in aircraft
    in accordance with installations in our G-21's N1583V, N69263, N87U
    and copy of 337 with appropriate drawings dated March 3, 1955. This
    337 was part of installation kit as supplied by Griffco Aviation,
    Boeing Field, Seattle, Wash. Electric load computed and found to
    not exceed 80% of total rated generator output.
  - .2. Weight and balance computed and entered in log.
  - 3. Installation made in accordance with FAR Part 43 and technical data previously approved on the same type, make and model aircraft. A copy of the approved data used, a form 337, and all instructions and drawings are attached to this form.

END

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	MAKE				MODEL				
1. AIRCRAFT	Grun	mem				21A			
I. AIRCRAII	SERIAL NO.					y and regi	STRATION M	ARK	
	B-1	100			N88	U			
	NAME (As shown o	on registration certific	ate)			s shown on reg	gistration certi	ficate)	l
2. OWNER	odiak Airway	rs. Toc.			. C. Box				
•				· · · · · · · · · · · · · · · · · · ·	odiak, A	iaska 996	15		
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į.				U.S. CERTIFICA		<del></del>	Powerpla	nt - Class I	£ 2284
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	TO CUITO ALE	200001		MANUFACTURE	R		Limited A	ccessory	
D. I certify	that the repair an	nd/or alteration ma	de to	the unit(s) ident	ified in item	4 above and	described o	n the rev	erse or
attachme	ents hereto have be	en made in accorda urnished herein is t	nce w	im the requireme	nts of Fart 4	J 01 ME U.J.	Federal Avia	tion Regu	lations
and that	the information i	urnished herein is t	iue ai			<del>-</del>		_	$\mathcal{L}$
DATE				SIGNATURE OF	AUTHORIZED	INDIVIDUAL	.19 /	- /	7 /
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	24			VAL FOR RETURN T			<u>:</u>		
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	FLT. STANDARDS	MANUFACTURER	1.	INSPECTION AUTHOR	ZATION	/ (apecity)	•		
BY INS	PECTOR	<del> </del>	┼	CANADIAN DEPARTM	ENT	<i>f</i> :			ļ
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FAA Form	<b>337</b> (7-67)				′			(	0320)

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  $s_i$  acce is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.) Remove Mark 12 Transceiver, ARC Omni Bearing Selector Indicator and I.D. 48 Indicator. Installed King KX-170 Transceiver, KI201 Indicator, KR-85 A.D.F., KA-25 Isolation Amplifier, KA-38 Voltage Regulator and Brelonix H.F. R1050B Transceiver in accordance with manufacturer's instructions and drawings. Continuous electrical load does not exceed 100% of rated generator output. Weight and Balance Data and Equipment List amended currently.

ADDITIONAL SHEETS ARE ATTACHED

U.S. GOVERNMENT PRINTING OFFICE : 1967 OF-272-

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# FELEAL AVIATION AGENCY MAJOR REPAIR AND ALTERATION

(Airframe, Powerplant, Propeller, or Appliance)

FOR FAA USE ONLY

NCITA AIRTHAND TINO

INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form.

MAKE MODEL 1. AIRCRAFT SERIAL NO. NATIONALITY AND REGISTRATION MARK N-88u B-100 NAME (As shown on registration certificate) ADDRESS (As shown on registration certificate) 2. OWNER 3923 N.W. 24th. St. Dean H. Franklin Florida 3. FOR FAA USE ONLY

	4. UNIT IDENTIFICATION  UNIT MAKE MODEL SERIAL NO.							
пип	MAKE	MODEL	REPAIR	ALTER- ATION				
AIRFRAME	***************************************	(As described in item 1 above)	••••••	XX				
POWERPLANT								
PROPELLER		FLORMED						
APPLIANCE	MANUFACTURER &							

CONFORMITY STATEMENT

A. AGENCY'S NAME AND ADDRESS B. KIND OF AGENCY C. CERTIFICATE NO. U.S. CERTIFICATED MECHANIC AE17456 Dean H. Franklin FOREIGN CERTIFICATED MECHANIC 3923 N.W. 24th. St. CERTIFICATED REPAIR STATION Miami, Florida. MANUFACTURER

D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 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.

Uctober 26, 1967 🗗

SIGNATURE OF AUTHORIZED INDIVIDUAL

7. APPROVAL FOR RETURN TO SERVICE

Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Agency and is APPROVED REJECTED

FAA FLT. STANDARDS INSPECTOR OTHER (Specify) MANUFACTURER CANADIAN DEPARTMENT verified by Operator #38 OF TRANSPORT INSPECTOR OF AIRCRAFT FAA DESIGNEE REPAIR STATION DATE OF APPROVAL OR REJECTION CERTIFICATE OR SIGNATURE OF AUTHORIZED INDIVIDUAL DESIGNATION NO. nov. 7-67

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IA 1313890 FAA Form 337 (1-65) OBSOLETE PREVIOUS EDITION

0052-025-8000 (8320)

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.)

The following repairs were made on this aircraft.
Replace worn keel from station 7 to 16.
Repairs made in accordance with Grumman Structural Repair Manual,
Page 120. Fig. 67. END

> RECEIVED NOV 7 1967 SO-GADO-5 MIAMI, FLORIDA

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ADDITIONAL SHEETS ARE ATTACHE

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	MAKE	-		,		MODEL	G-21A			
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	fy that the repair nents hereto have	a heer	a made in scord	ance T	vith the requirem	ents of Part 4	or the U.S.	described or Federal Aviat	the revion Regi	erse or ulations
and th	at the information	n fur	nished herein is	true a	nd correct to the	best of my k	nowledge.		<u> </u>	
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CERTIFICATE OR DESIGNATION NO.

IA 1313890

DATE OF APPROVAL OR REJECTION

SIGNATURE OF AUTHORIZED INDIVIDUAL

0052-025-8000 (8320)

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.)

The following Major repairs were made on this aircraft in accordance with Grumman structural repair manual and AC 43.13-1 Chapter 2.

section 3, Figure 2.22. Replaced by spliceing aft 4" of skin to spat cap of lower right fuel tank.

Replaced by spliceing aft 7" of skin from spar cap on lower R. center section outboard of fusilage.

Removed corroded skin and replaced with 18" square patch at station

29 to 31 above Grumman hull ref. line.
Removed corroded skin and replaced patch 7" high from hull line between station 15 to 19.

Removed skin and replaced with new skin and factory rubs at forward

keel vent at station 15 and 16.
Removed aft bottom hull skin at station 28 to 29. Replaced hull ribs at these stations with factory manufactured ribs.

END

#### RECEIVED FAA

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7. APPROVAL FOR RETURN TO SERVICE the unit identified in item 4 was inspected in the manner prescribed by Pursuant to the authority given persons specified below, the Administrator of the Federal Aviation Agency and is OTHER (Specify) FAA FLT. STANDARDS INSPECTOR MANUFACTURER CANADIAN DEPARTMENT OF TRANSPORT INSPECTOR OF AIRCRAFT REPAIR STATION FAA DESIGNEE SIGNATURE OF AUTHORIZED INDIVIDUAL DATE OF APPROVAL OR REJECTION CERTIFICATE OR DESIGNATION NO. IA 1313890 G.E. LANDRE 10/1/67.

FAA Form 337 (1-65) OBSOLETE PREVIOUS EDITION

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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.)

The following repairs were made on this aircraft in accordance with Grumman repair manual, Page 36, Nav. Acr. 01-85u-3 Capstrip repair. Capstrip was splicedinaide of cabin on right hand side in accordance with the above approved method of repair.

ADDITIONAL SHEETS ARE ATTACHED

U S GOVERNMENT PRINTING OFFICE 1965 OF- 761





CONVEYANCE FILED WITH

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#### FEDERAL AVIATION AGENCY

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

Form Approved
Budget Bureau No. 04-R060.1 FOR FAA USE ONLY

OFFICE IDENTIFICATION MIA GAD 7-3-05

INSTRUCTIONS: Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. MODEL G-21-A ALITY AND REGISTRATION MARK N88U Grumman 1. AIRCRAFT SERIAL NO. B-100 ADDRESS (As shown on registration certificate) NAME (As shown on registration certificate) 3923 N.W. 24th. St. Miami, Florida Dean H. Franklin 2.ª OWNER

4. UNIT IDENTIFICATION								
TINU	MAKE	MODEL SERIA	L NO. REPAIR	ALTER-				
AIRFRAME	***************************************	As described in item 1 above)	w. XX					
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D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 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.

9/28/67.

SIGNATURE OF AUTHORIZED INDIVIDUAL

7. APPROVAL FOR RETURN TO SERVICE

Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Agency and is APPROVED REJECTIVE Manner prescribed by

OTHER (SpecifiNO. 2 FAA FLT. STANDARDS INSPECTOR MANUFACTURER CANADIAN DEPARTMENT OF TRANSPORT INSPECTOR ΒY FAA DESIGNEE REPAIR STATION SIGNATURE OF AUTHORIZED INDIVIDUAL OF AIRCRAFT DATE OF APPROVAL OR CERTIFICATE OR DESIGNATION NO. REJECTION

10/1/67. IÁ 1313890 FAA Form 337 (1-65) OBSOLETE PREVIOUS EDITION

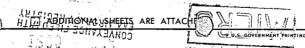
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Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

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

The following repairs were made on this aircraft in accordance with Grumman repair manual, Page 36, Nav. Aer. c1-85u-3 Capstrip repair. Capstrip was splicedinside of cabin on right hand side in accordance with the above approved method of repair.

ОСТ 5 3 27 РН °67 ОКГАНОНА СІТУ, ОКГА

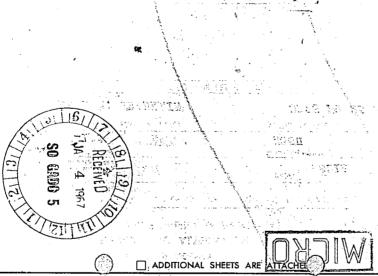


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	that the repair and/or alteration ma ents hereto have been made in accorda	de to the unit(s) iden	tified in item 4 above a	nd described o S. Federal Avia	n the reve tion Regu	erse or lations
and that	the information furnished herein is t	rue and correct to the	best of my knowledge.			
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		APPROVAL FOR RETURN	O CERVICE	7(	-	
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the Admini	strator of the Federal Aviation Agency	and is APPROVI	ED REJECTED OTHER (Specif			
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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.)
- Item 1- Repaired right front lower box beam cap strip on center section extending 10" inboard and 16" outboard of center section and fusalage attach bracket. Repair done in accordance to Fig. 14 Page 36 of Grumman G21A structual repair manual 01-65VA-9.
- Item 2- Removed cabin air hoses through forward center section web.

  Holes plugged in accordance to FAR 43.13-1 Page 49 Par.1, Ref.
  fig. 2.22.
- Item 3 Repaired center stringer at station 27. Repair done in accordance to FAR.43.13-1 page 50 Par.6.
- Item 4 Repaired Left flap by flush patches on skin between station "0" and station 7 11/16 and between station 7 11/16 and 17 11/16 located 6 3/4" aft of leading edge and 2" and 15\frac{1}{2}" respectfully extending outboard from station "0". Replace both angle stiffners between subboard station "0" & 7 11/16. Replace forward stiffners between station 7 11/16 and station 17 11/16. Replace aft stiffners between station 101 11/16 and 113 3/16. All work done in accordance to FAR 43.13-1, page 49, Par. 1



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2	certify	that the repair	and/or alteration made been made in accorda	nce w	rith.	the requireme	ified in iten	45 of the O.S. r	described ederal Avi	on the reve	erse or lations
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•				PPRO		FOR RETURN T					
Purs	suant to Admini	the authority gi	iven persons specified deral Aviation Agency	below and	, the	APPROVE	d in item 4	was inspected i	in the man	ner prescri	bed by
	FA	A FLT. STANDARDS	MANUFACTURER	X		PECTION AUTHOR		OTHER (Specify)		•	
BY		A DESIGNEE	REPAIR STATION		OF	TRANSPORT INSE		W			

CERTIFICATE OR DESIGNATION NO. IA 175516 March 16, 1965 IA 175516

FAA Form 337 (1-65) OBSOLETE PREVIOUS EDITION

DATE OF APPROVAL OR REJECTION

0052-025-8000 (8320)

AUTHORIZED INDIVIDUAL

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.)

Folding Seat installed in accordance with drawings #1 and #2 of STC #SA-4-1137.



ADDITIONAL SHEETS, AREAATT

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	MAKE Grum	man		-	1.	21 A.			
AIRCRAFT	SERIAL NO.	B 100	*.		иатіонацту	UAND REGIST	RATION MA	ARK	
	NAME (As shown o	n registration certific	ate)		ADDRESS (As	shown on regis	tration certif	icate)	
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TE				SIGNATURE OF			-		
March	1, 1966			R.LIV	Jalle	snel			
			APPRO		O SERVICE		1		
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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.)

Removed 22D30 Hamilton Props.
Installed Hartzell Props HC-93-W30 as per STC SA1-52

Recovered Wings in accordance with Dean Franklin Aviation Enterprises Drawing #12302-S Titled: Method of using metal covering on Grumman G-21, N3945C Serial #B-49 Dated Sept. 1, 1955.

C.A.A. Engineering approval dated 9-2-1955

Couch Installation in accordance with Dean Franklin Aviation Ent., Inc.
Drawing #A1205-1 Titled: Divan Installation Grumman G-21A (N333F)
C.A.A. Engineering Approval 12/28/55

END

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ADDITIONALĮSHEĘTS ARE ATTACHED

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PRINCE PROPERTY.

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	R REPAIR AND ALTERATIO				LER OR A	PPLIANCE)
T	MAKE	MOD	DEL.	SERIAL NO.	1 /	AND REGISTRATION MARK
1. AIRCRAFT	Grumman		G-21A	B-100 SS (Street and number, city, zon		380
2. OWNER	NAME (First, middle, last) Windjammer Air Tat		203 Mian	Wilson Bldg. i Beach 41. F	220 71 'lorida	St.
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TINU	маке		MODEL.	SERIAL NO.	MAJOR REPAI	
a. AIRFRAME	**************	♦ (As described in	n item 1 above) *****	***********		XX
b. POWERPLAN	т			The detalateration identifies airworthiness requirements described ancient, subject	d herein come and is app as a confermity.	es with the applicable of crivings the applicable of the applicabl
c. PROPELLER				authorized in CAR Part 13.	section 18.11	5).
d. APPLIANCE	TYPE AND MANUFACTURER			Date Date		FA Inspector
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CATEGOR	Y EMPTY WEIGHT (Po			GRAVITY (Inches from datum)		SEFUL LOAD (Pounds)*
Norma	al 6145  RMITY STATEMENT (Complete and	l check)		22.1	`\	1855
	AME AND ADDRESS	. *	6. KIND OF AGENCY		c. CERTIF	ICATE NO.
40 L	iam N. Kilborn ilac Lan e a, Florida - 33004		Foreign Cert Certificated Manufacture (Chec		on 1	A & P 40230 <del>9</del>
attach me	that the repair and/or alterations hereto have been made in a mation furnished herein is true	centannee with	i the reduirements of	I TAIL TO OF THE C. D. C.	d described Civil Air Re	on the reverse or gulations and that
(Date re	2/64 epair and/or alteration completed)		- Mm	M. Holy (Signature of authorized i	individual)	
Pursuant	VAL FOR RETURN TO SERVICE t to the authority specified below the Federal Aviation Agency ar	v the unit iden	tified in item 3 was	والمستوال المستشمل والمريدي		
3 0 8	PPROVED BY [ FAA Designation FAA Fligh Standards Inspector		ir Station To	anadian Department of ther (Specify) Inspec	tion A	
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	arded for engineering comment of the following the followi		tached memorandur		<del>941/20</del>	RECORD
	GADO 5 (FAA designation number)		1 Mar	.(Signature Flight Standar	ds Inspector)	SO GADO



This form must be completed in duplicate each time a major repair and/or alteration is made of an aircraft, airframe, power-plant, propeller or appliance. After the repair and/or alteration has been inspected and item 6 completed, the original copy of this form will be made available to the aircraft owner for retention as part of the aircraft records. The duplicate copy is retained by the FAA for administrative purposes.

See CAM 18 for detailed instructions concerning the information to be furnished with this form and instructions concerning its preparation.

#### 8. DESCRIPTION OF WORK ACCOMPLISHED.

Removed all existing redio equipment, modified instrument panel, and installed redios as follows:

Two ARC T-11B transmitters install ed forward of pilots rudder pedals at arm -46. Transmitter control box mounted under pilot's instru ment panel at arm -21. Transmitting anten na is located just ahead of windshield. Model 888 VOR indicator and Kollsman model 1859 course selector installed in panel at arm -27. ARC 022A control unit installed in panel at arm -26. ARC R-13B reciever and B-10A convertor installed at arm -62, and E-13B rack installed at arm -61 forward of bulkhead 7 on right side. ARC F-10A filter amplifier installed at arm -61. Expi sting recieving antenna was used.

Removed all existi ng seats, replaced floorboards, and installed seats as follows:

Installed 5 seats in cabin at locations shown on attached loading charts. Seats attached to structure same as Grumman original. 3 pl ace lou nge (STC SA2-760) installed on right side of cabin to original Grumman seat attach points, location shown on attached loading charts. Seat bel ts for lou nge attached to original Grumman seat attach points with 1/8" aircraft cable and AN 43 eye bolts.

All work done according to the ap plicable parts of CAM-18.

Weight and balance report and loading charts are attached.

An electrical load analysis was accomplished in accordance with CAM-18.30-12(i). The ammeter reading with all continous loads on was 15 amps. Adding 10% this comes to 16.5 amps. This is within 80% of the cap acity of bo th generators or one alone since this airplane is equipped with two 50 amp generators.

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\*If additional space is needed attach additional sheets bearing alrevait nationality and registration mark and date work completed.

Check block if additional sheets are attached.

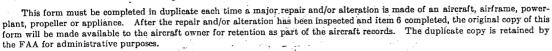
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Form FAA-837 (4-52)

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MAJO	R REP	AIR AND ALTER	ATION FORM	AIRFRAME,		PLANT, PROPELI	LER OR ALL	EIRITOL)
1. AIRCRAFT	MAKE	Grumman	M	G-21A	i	SERIAL NO. B-100	N 881	D REGISTRATION MARK
2. OWNER		Warner H.			1420 Ft.	(Stred and number, city, 201 O NE 60 St. Lauderdale	Florida	3
3. COMPLE CORDAN	TE ONL	Y FOR UNIT REP H CIVIL AERONAL	AIRED AND/OR ITICS MANUAL	ALTERED. DE	SCRIBE	WORK ACCOMPLI	SHED ON RE	VERSE IN AC-
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a. AIRFRAME	-17.1		(As described	l in item 1 above) (	••••••	*********		XX
b. POVERPLAN	- 1	V 29 1967	<b>X</b>	orthiness requirem	ents and is	complies with the applicate sporoved only for the s	ove des-	
d. APPLIANCE	No	TYPE AND MANUFACTURES	**	11-26-6- Date	EAA Jus		ight	
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		e repair and/or alt eto have been made furnished herein is					4 44	n the reverse or lations and that
1	1/26/				Man	(Signature of authorized	individual)	
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l			<del></del>				F	orm FAA-337 (4-52)





See CAM 18 for detailed instructions concerning the information to be furnished with this form and instructions concerning its preparation.

#### 8. DESCRIPTION OF WORK ACCOMPLISHED.

Installed fire bottle and first aid kit as required for issuance of air taxi certificate as follows:

Fyr-Fyter model 23-3 fire bottle was installed on rear of left rear seat at station 115. Bracket was bolted directly to seat structure.

Aero-Doc first aid and survival kit was installed in rear baggage compartment on right side center at station 169. Compartment door was placarded as to location of kit.

#### WEIGHT AND BALANCE

Aircraft Empty Fire Bottle First Aid Kit	6636.5 4.5 4.0 6645.0	@ 22.6 @ 115.0 @ 169.0	151560.2 517.5 670.0
			 152747.7

152747.0/6645.0 - 23.0 New empty weight center of gravity

New empty weight - 66+5.0 lbs.
New useful load - 1355.0 lbs. at 8000 lbs. gross weight.

All work done according to CAM-18.30

\*If additional space is needed attach additional sheets bearing aircraft nationality and registration mark and date work completed

Check block if additional sheets are attached.

1: S. GOVERNMENT PRINTING OFFICE: 1961-0-587360

THE RESIDENCE OF THE PROPERTY

Form FAA-887 (4-52)

MAJOR	REPAIR AND ALTERATI	. CIVIL AE	PARTMENT OF RONAUTIOS ADMI	NISTR	ATION	Budget	pproved. Bureau No. 41-R052.4
1. AIRCRAFT	MAKE		MODEL.		-ERIAL NO.		AND REGISTRATION MAI
	GRUMMAN  NAME (First, middle, last)		G2149		B-100	NSSU	
2. OWNER	Beldex Corp.			Lam St.	ss (Squared number elly, 20 bert field Louis 21, Kiss	me and State)	
3. COMPLETI CORDANC	E ONLY FOR UNIT REPAIR E WITH CIVIL AERONAUTIO	ED AND/OF	ALTERED. DE	SCRIE	BE WORK ACCOMPLI	SHED ON F	REVERSE IN AC-
דואט	MAKE		MODEL.		SERIAL NO.		OF WORK (Check)
a. AIRFRAME	***************************************	♦ (As describe	d in item,1 above)	*****	******************		-
b. POWERPLANT					1	<del>2, 1</del>	
PROPELLER					.ens benomin		
d. APPLIANCE	TYPE AND MANUFACTURER	,				•	
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5. CONFORM	TY STATEMENT (Complete and	check)	<u> </u>	· · · ·	<del></del>		
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1654010-4	esignation number)				(Signature Aviation Safety A	Agent)	



This form must be completed in duplicate each time a major repair and/or alteration is made of an aircraft, airframe, power-plant, propeller or appliance. After the repair and/or alteration has been inspected and item 6 completed, the original copy of this form will be made available to the aircraft owner for retention as part of the aircraft records. The duplicate copy is retained by the CAA for administrative purposes.

See CAM 18 for detailed instructions concerning the information to be furnished with this form and instructions concerning its preparation.

8. DESCRIPTION OF WORK ACCOMPLISHED.

Aircraft weighed with full gas and full oil

Right Wheel 3860 lbs.

Right Wheel 3695 lbs.

Tail Jack Point 460 lbs.

The above readings were taken by Red Aircraft Service, Inc. on 2/27/57.

Compuntations on attached sheets.

\*If additional space is needed attach additional sheets bearing aircraft nationality and registration mark and date work completed.

Check clock if additional sheets are attached.

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•				. AVIATION AGI			Budget Bureau No. 41-R052.4.
	REP/	AIR AND ALTERATIO	N FORM (A	DEL	SERIAL NO.		R UK APPLIANCE) HATIONALITY AND REGISTRATION MARK N 88U
1. AIRCRAFT	G	rumman		G-21 A	B -10		
2. OWNER	ZAM C	Nrst, middle, fast) UFACTURORS NAT f DETRIOT		ANK	ESS (Street and num DETRIOT	, MICH	
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UNIT 57		MAKE	÷.	MODEL	SERIAL NO	,	NATURE OF WORK (Check)  NAJOR REPAIRS NAJORANTERATION
a. AIRFRAME			(As described i	n item I above) ####		1112	
b. POWERPLANT	r		Borg. Jorge	on the child	3) RE	CEIVED	PECEN STAND
c. PROPELLER					SEP SEP	14 1961	
d. APPLIANCE		TYPE AND MANUFACTURER		A COMPANY	$\lambda \lambda$	0-2-21	807 0
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See CAM 18 for detailed instructions

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CONFORMIT			22.4			OL LOAD (1 duita)
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AGENCY'S NAME AN	Y STATEMENT (Complete and a	check)	5. KIND OF AGENCY			
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	the repair and/or alteration ereto have been made in ac-		unit(s) identified			the reverse o
11/29/	/58	id correct to t	the best of my kno	owledge,	(	
	d/or alteration completed)	(		(Signature of authorized in	dividual)	
Pursuant to th trator and is	OR RETURN TO SERVICE e authority specified below to	(Check and comple the unit ident	te appropriate items) diffied in item 3 wa	as inspected in the manne	r prescribed b	y the Adminis
Ä APPRO □ REJEC	) RY ( '-	ion 🗌 Rep	nufacturer [ (	Canadian Department of T Other (Specify) Insp	ransport Inspe	ctor of Aircraf
	oroval or rejection)		Freder (Signatur	re of authorized individual; title or	r identification nur	1212874
☐ Forwarded for Accepted — Reg. 2	ETED ONLY BY CAA PERSON engineering comment  2 FW <sup>(Date)</sup>		ached memorandu	m Depot Check	gd /2/5/	258 Date)





This form must be completed in duplicate each time a major repair and/or alteration is made of an aircraft, airframe, power-plant, propeller or appliance. After the repair and/or alteration has been inspected and item 6 completed, the original copy of this form will be made available to the aircraft owner for retention as part of the aircraft records. The duplicate copy is retained by the CAA for administrative purposes.

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#### 8. DESCRIPTION OF WORK ACCOMPLISHED.

- 1. Removed 1. Item 221 (engine work shelf) 9# @ 189"
  2. Item 205 (b) (2 writing tables) 20# @ 79"
  3. 17E-2 Collins Transmitter 57# @ 35
- 2. Removed fabric from wings and installed .025 24ST anadized alclad in accordance with drawing #BAS 104 and code and procedure sheet #BAS 104A approved by CAA on 4-27-55, weight change + 40# at + 60".

	Weight	Ara	Moment
Old EWCG Remove Item 221 Remove Item 205 (b) Remove 17E-2 Add metal wings	6682.5 20 - 57 + 40	23.9 189 79 35	154436.20 - 1701.0 - 1580.0 - 1995.0 + 2400.
Mar mo oca mando	6636.5	are ATT of	151560.2

New empty wt. - 6636.5 New empty cg - 22.6" New useful load - 1363.5



\*If additional space is needed attach additional sheets bearing aircraft nationality and registration mark and date work completed

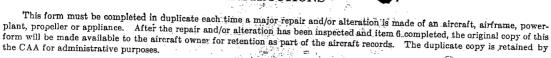
Oheck block if additional sheets are attached.

JSCOMM-DC 32277

Form ACA-337 (4-52)

	(a pr		10	U. S. DEP	ARTMENT OF CO	MMERCE ()	]	Form appro Budget Bur	ved. eau No. 41-R052.4.
MAJO	R REPAI	R AND ALT	ERATIO	N FORM	(AIRFRAME, P	WERPLANT, PR	OPELLER (	OR APP	LIANCE) D REGIST PATION MARK
. AIRCRAFT	MAKE	RUMMAN	, s	Letter	JRF-6	B-100	7	1 880	D REGIST WATTON MARK
. OWNER	NAME (Fir.	st, middle, last)				LAMBERT F. ST. LOUIS	IELD 21,MO.		
. COMPLE CORDAN	TE ONLY CE WITH	FOR UNIT	REPAIRE	D AND/OR MANUAL	ALTERED. DESC	RIBE WORK ACC	OMPLISHED	ON RE	VERSE IN AC-
UNIT		MAKE			MODEL	SERIAL NO.	·	NATURE OF OR REPAIR	MAJOR ALTERATION
AIRFRAME		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	******	(As describe	d in item Labove) 00	*******	. X	XXX	
6. POWERPLAN	π	5							
. PROPELLER	-								
d. APPLIANCE	1	YPE AND MANUFA	TURER						
· AF	TER the rep described	HT AND BAL pairs and/or alte below were mad	rations le.	case o stalled if app	f a spare compone I in an aircraft. A licable.	pleted by repair or nt, it will not be on t this time, it will l ER OF GRAVITY (Inches fro	be completed	il such c by the ir	However, in the omponent is installing agency,
CATEGO	RY	EMPTY	WEIGHT (Po	unds)				1.	
STANDA	RD	668	2.5 11	8.	+	23.1 "			.318 lbs.
		TATEMENT (	Complete and	check)	b. KIND OF AGEN	<b>v</b>	\ 6	. CERTIFIC	TE NO.
POM	R. E		RPORT ORIDA		☐ Foreign ☐ Certifica ☐ Manufac	rtificated Mechanic. Certificated Mechanic ted Repair Station. turer. Check if repair or ras made under dele ion procedures.)	alteration	A&E	<b>3817</b> 89
attachm the info	ents here rmation f 2-12-1 repair and/o	to have been urnished here	made in a in is true :	and correct	the unit(s) identivith the requirement to the best of my	died under itcla 3 a tis of Part 18 of the showledge.	uge		n the reverse or lations and that
6. APPRO Pursuan trator a	it to the s	RETURN TO	SERVIC	r the unit i	÷:	was inspected in t			
<b>XX</b> .	APPROVI REJECTE	ED BY [ ]	CAA De CAA Av Safety A	iation 🔲		Canadian Depart	Insp. I	Autho	•
12	-12-5	7 val or rejection)	· · · · · · · · · · · · · · · · · · ·		(Sig	ind R. Ben	ge vidual; title or ide	681	789 number)
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- □ Forw		engineering 2//// prie) eg. 2 FV	omment	☐ Reinspec	te attached memora	<del></del> _ [] 8	Spot Checked		(Date)
	TA	SDO 18		ه و همای چیپ در د	M	(Signature/A	viation Safety Ag	gent)	





See CAM 18 for detailed instructions concerning the information to be furnished with this form and instructions concerning its preparation. 8. DESCRIPTION OF WORK ACCOMPLISHED.

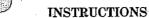
Recovered right wing top from Sta. 196 to 226. Left wing top from Sta. 86 5/16 to Sta. 123. Grade "A" fabric and finishing tape and cellulose acetate buyrate dope was used in this repair. The above repair and procedure was accomplished in accordance with 18.30-3-(c)-(4) and 18.30-3-(d)-(5) of CAM 18.

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"Il additional space is needed attach additional sheets b

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				<del></del>		orm appro	ved.
		CIVIL AERON	TMENT OF CO AUTICS ADMINIS	TRATION			eau No. 4:-R052.4.
MAJOR	REPAIR AND ALTERATIO	N FORM (AI	IRFRAME, PO		PELLER (	OR APP	LIANUE) D PEGISTRATION MARK
. AIRCRAFT	Grumman Goos	зе моде	JRF-6	SERIAL NO. B-100	'N	88U	D PEGISTRATION III
. OWNER	NAME (First, middle, lost)  Beldex Corpo	oration		Lambert Fi St. Louis,	eld Misso	ur <u>i</u>	
. COMPLETI	E ONLY FOR UNIT REPAIRS E WITH CIVIL AERONAUTIC	D AND/OR AL S MANUAL 18.	TERED, DESC	RIBE WORK ACCO	MPLISHED	ON RE	VERSE IN AC-
			ODEL	SERIAL NO.	<u></u>	NATURE OF	WORK (Check) MAJOR ALTERATION
UNIT	MAKE	A	<u> </u>		MAJO	R REFAIR	
AIRFRAME	***************************************		<del>-  - </del>			CXXX	
. POWERPLANT	Pratt & Whitney	R98	5-14B	19387		1	
PROPELLER		agradi Tes			-		g
L APPLIANCE	TYPE AND MANUFACTURER	i two sign	១៩៣៧ ១೩ ។				
* AFT F	T WEIGHT AND BALANCE DA ER the repairs and/or alterations described below were made.		spare compone an aircraft. A	pleted by repair or al nt, it will not be com t this time, it will be		il such co	
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5. CONFORM	MITY STATEMENT (Complete and	i check)	b. KIND OF AGEN	Υ		. CERTIFICA	TE NO.
T.ລໍກາໄ	ine Works, Incorport Field Louis 21 Missou		Foreign ( XX Certifica  Manufac	tificated Mechanic Certificated Mechanic ted Repair Station. turer. Check if repair or a smade under delega on procedures.)	teration	3	3933
attachme the inform		E (Check and complete the unit iden	the best of my	was inspected in the	Japie 1 forijed individ manner pr	ual) escribed	E341467
Feb	ruary 25, 1956	signee Ma riation Regent	nufacturer [ pair Station [	Canadian Departm Other (Specify)	hu t	Lon	Lela
	te of approval or rejection)  OMPLETED ONLY BY CAA P	ERSONNEL		V			
	rded for engineering comment ted (Date)	☐ See at	ttached memora	te) Spo	Reg. 2	FN 12	(Date)
	CAA designation number)			(Signaturn A vis	tion Barety Ag	ent)-`	Form ACA-337 (4-5)
16-54010-4							



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#### 8, DESCRIPTION OF WORK ACCOMPLISHED.

Engine, magnetos, carburetor, ignition harness given major overhaul. All steel parts magnetic inspected. Inspected all aluminum alloy parts. Incorporated Pratt and Whitney service bulletin #1488 on crankshaft thrust nut threads. Engine run on test stand three and one-half hours. Engine preserved for long time storage.

12-21-56
Removed crankshaft from engine. Reworked crankshaft thrust bearing nut threads on crankshaft to 14F-56 as per Pratt & Whitney service bulletin #1488, revision B, or Ad note 56-23-2.

Ressemble engine and run on test stand 1 3/4 hours. Crankshaft number 100341.

O A Capensol & Cape O Pende Sole One Observe 200 Junior Brown Bankar

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\*II additional space is needed attach additional sheets bearing aircraft nationality and registration mark and date work completed.

Check block if additional sheets are attached.

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,			CIVIL AERO	RTMENT OF COM	RATION	Bu		eau No. 41-R052.4.
MAJOR	REPAÌR AN	D ALTERATIO	ON FORM (	AIRFRAME, POV	VERPLANT, PROPE			
1. AIRCRAFT	AKE		МО	DEL	SERIAL NO.	NATION	ALITY AN	D REGISTRATION MARK
	Grumma  AME (First, middl		<del></del>	JEF-6 ADD	RESS (Stree Ben) 600, city,	zone and Slet	88	Ū
2. OWNER	Beldex (	Corporati			Lambert Field St. Louis, Me			
3. COMPLETE CORDANCE	WITH EOR	UNIT REPAIR AERONAUTIO	ED AND/OR A	ALTERED. DESCR	IBE WORK ACCOMP	ISHED O	N RE	VERSE IN AC-
UNIT		MAKE	. Iðud	MODEL	SERIAL NO.	MAJOR R		WORK (Check)  MAJOR ALTERATION
a. AIRFRAME	******		(As described)	in item I above) ****	***************************************			
b. POWERPLANT ]		Whitney		ANI4B	JP 210202	XXX	XX	
PROPELLER		ធើ	utide ) d.	ក្នុង ខ្ញុំស្វារៈ				
d. APPLIANCE	TYPE AND	MANUFACTURER			1,7227 (			
*AFTER	WEIGHT AN the repairs and scribed below w	D BALANCE DAd/or alterations ere made.		a spare component, n an aircraft. At t	ted by repair or altera it will not be complet his time, it will be con	ted lintil s	nich co	lowever, in the emponent is in- stalling agency,
CATEGORY	j	EMPTY WEIGHT (P	ounds)*	EMPTY CENTER	OF GRAVITY (Inches from datu	nt)*	USEF	UL LOAD (Pounds)*
					<b>a</b> /		/	318
5+d.	6	682.5		- Take 19:2	3./			
	ITY STATEM	682, S	d check)	b. KIND OF AGENCY		c. CE	RTIFICAT	
5. CONFORMI a. AGENCY'S NAME Engine Lamber	and address  e Works rt Field	ENT (Complete and	rated	b. KIND OF AGENCY  U. S. Certificated  Certificated  Manufactur  (Ch	icated Mechanic. tificated Mechanic. Repair Station.	tion	<del></del>	E NO.
5. CONFORMI  a. AGENCY'S NAME  Engine Lamber  St. Le	AND ADDRESS  e Works rt Field ouis 21	Incorpo	rated	b. KIND OF AGENCY U. S. Certifi Foreign Cer Certificated Manufactur (Ch was tion	icated Mechanic. tificated Mechanic. Repair Station. er. eck if repair or altera made under delegation procedures.) under item 3 above 8 of Part 18 of the U. S	tion op-	393	E NO.
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8. DESCRIPTION OF WORK ACCOMPLISHED.

Tjis is to certify that Pratt & Whitney R985-AN14B engine, s/n JP 210202, was completely major overhauled. All steel parts in same were magnetic inspected. All parts replaced in engine were factory approved parts.

New piston rings New supercharger bearings pins, and locks. 1.1.3 383 1.1. 3 3 4 4 4 New master rod bearing New piston pin bushings and knuckle pin bushings New piston pins New cam reduction gear New oil seal rings New front main bearing New rear main bearing New real main bearings
New vertical drive gear bearings
New 7MM ignition wire
Replaced #3, 7 and 9 pistons
Bosch magnetos overhauled and beach tested.

Engine preserved for long time storage.

12-21-56

Removed crankshaft from engine. Reworked crankshaft thrust bearing nut threads on crankshaft to 14F-56, as per Pratt & Whitney service bulletin #1488, revision B, or Ad note 56-23-2. Reassemble engine and run on test stand 1 3/4 hours. Crankshaft number C1672.

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DEPARTMENT OF COMPLETE

FORM APPROVED BUDGET BUREAU NO 41-R957.3.

		APPLICATION AND AUT	THORIZATION FOR F	ERRY PERMIT
		1. 1	APPLICATION	
	IONS: Submit in epresentative.	duplicate to authorized Civil	Aeronautics Administration	on representative or designated manufacturing
		DESCRIP	TION OF AIRCRAFT	
REGISTERE	D IN NAME OF		ADDRESS	14-4 F1s
	Dean H. Fran	ıklin	et de la companya de la companya de la companya de la companya de la companya de la companya de la companya de	4th Street, Mismi, Fla.
MAKE	Grumman	1.0	MODEL G21A	<u> </u>
MANUFACTI	B100	ř	IDENTIFICATION M.	ARK
		DESCRI	PTION OF FLIGHT	
FROM	Miami, Flori	ida	Sebring,	Florida
VIA	Direct	* * * * * * * * * * * * * * * * * * * *	DATE 10-8-65	DURATION 3 days
PURPOSE		<del></del>		
	Engine change	c at Eighth Air Dep	ot, Sebring, Flor	ida.
				•
				,
I HEREBY P	equest authority to	ferry the above-described air	craft for the flight specified	L ·
4	$\mathcal{D}_{a}$	ΛΛ		
· (		agunte	General Mar	Tager IV X 64
		2. AU	THORIZATION	<u> </u>
above. Th	is permit is valid u rtified crew, is oper	intil landing is effected at the	destination indicated in vo	your authority to conduct the flight requested our request, provided the aircraft is flown by a s, and in accordance with the following special
1. The			her than the crew	necessary for the purpose of
		ducted under Day Vis	sual Flight Rules	only.
94 The		his flight is for mo		dentified aircraft from where engine change
can	more advanta	geously be accomplis		
		ested areas is prohi		
				nanic or repair station and a
	tion made be. nded flight.	low or in the aircra	art logbook that t	the aircraft is safe for the
6. This	authorization		ival at destinatio	on and is not valid after
	10-11-6-	<u>.                                    </u>		
				-
REMARKS: I have i	nspected the	above identified ai	ircraft and found	it safe for the flight
intended	· Culting	A A	AP117610	12/3/12
Name	Robert J. Pa	quette C	Cert. No.	Date   0   8   6
DATE ISSUET		SIGNATURE OF CAA REPRESEN	NTATIVE	MESICOTEENO.
10-8	-65	J.B.	Beals	30-KAPO-5

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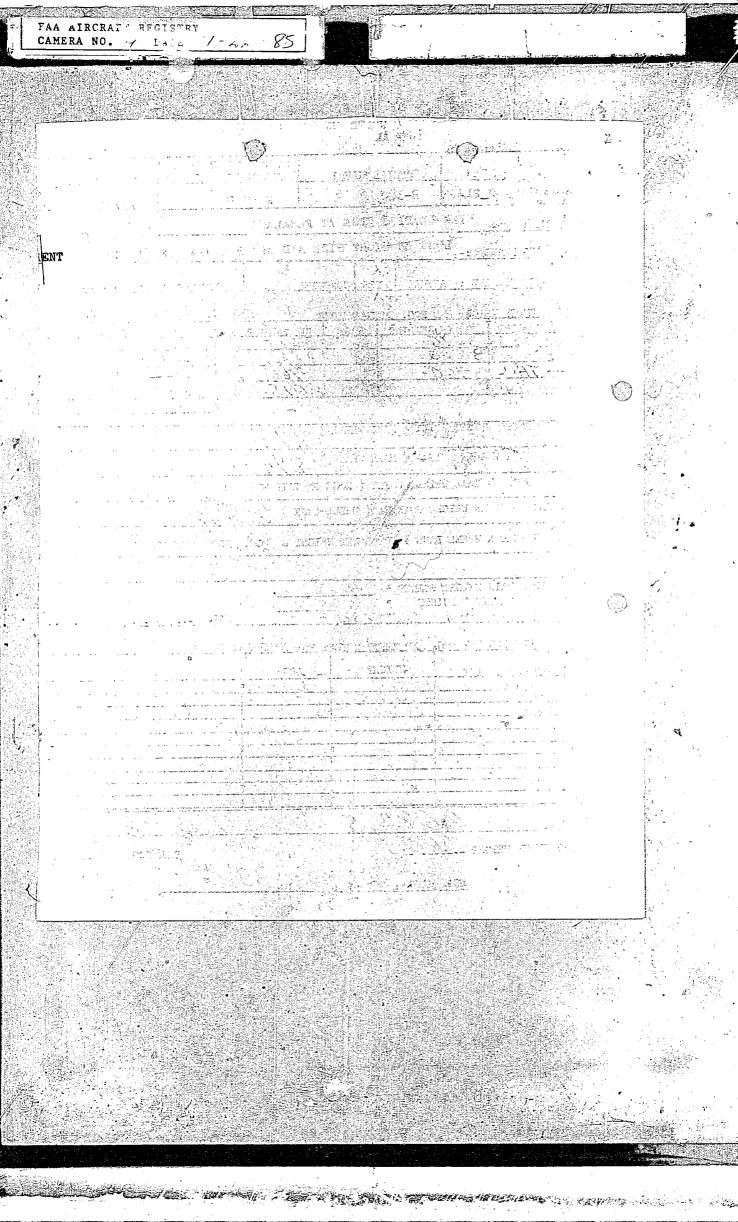
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WEIGHT AND BATINCE REPORT

· ·		·	<u> </u>	<u>)</u>	
MAKE	MODEL	SERIAL NUMBI	REGIST CLASS	TRATION AND DEICHTION	DATE OF REVISION
GRUMMAN	G_SlA	B-100		8 T	
	WING	LEADING EDGE	<del></del>		3/2/57
DAMM USE				<del></del>	
JEVELING 1	YEARS :-	IGS ON RIGHT S	IDE AND AFT	BULKHEAD OF	PILOTS COMPARTE
נו פוישמדקרים	SED ARE :- A	X			
manufattad oc	3m) 3m; :- V	CTUAL YES CO	MPUTED YES	1 STANDARD E	ZTGET: · · · · · · · · · · · · · · · · · · ·
		D FCG. COMPUTATI	ONS		D CONTLINERS
WEIGHT FOI RIGHT	NT 50ALE	READING TARE	NET VETGET		ulic-nul <del>uses</del>
1 FT	386	0	3860	THUSE	- <u>FUL - <del>26 I</del>X</u>
NOOE TH	L 460	2	460		NT - R'DIMTOR
TOTAL			8015	ELL	224
		<b>\$</b>		OIL-E	<u> </u>
URM OF RIC	HT WIGHT F	CINT ( MAIN WHEE	I.) 01/11		
ARM OF LEF	T WEIGHT FO	INT ( MAIN WHEE	8 / <del>7</del>	· · · · · · · · · · · · · · · · · · ·	
			8/7		
		ON ) THICH THIES	SE OR TAIL WEE	m) 284	3/4
DISTANCE B	ETWEEN WEIGH	HT POINTS ( WHE	EL BASE ) $2$	76 1/2	,
NOSE WEIG	HT X WHEEL I	BASE : TOTAL NET	WEIGHT = ECG	. FROM MAIN WE	MIGHT POINTS
	MAIN WEIGHT		83 .		
	N WEIGHT POI	NTS = 2	25	T100	3,08
BULL L'HON	DATUM TIME.	)	<u> </u>	ECG	· ····
(B) COMPU	PING NEW ECC	AND EMPTY WEIG	HT FOR EQUIPME	ENT CHINGES	
EQUIPM	ENT LIST	WEIGHT	ARM	3.1	OMÉRT .
lAIRPIAN	¥	80%5	13,08		36:20
2. REMOVII	10 OI ( 10 OZ S	1320	+8 +30	3960	
14.		-/3-0	72.5	3760	<u> </u>
5. <sub>45</sub> 6	<del></del>	<del> </del>			
7.					
ડ. 9.					
10.					
TOTAL	6.6	682.5	· · · · · · · · · · · · · · · · · · ·	1544	36.20
NEW EMPTY		6825			
Tivati TRAT TT	HETOUT, -757		<b>~</b> .		ECG 23.9
	-ECG.	RANGE 20,5	$\sim$ $\sim$ 3.	3,0	1661
•		1.		<del></del>	-

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GRUMMAN GOOSE (JA	PAGE 11 of 5 B 100 NSSU 3/57
FORWARD C.G.	
WEIGHT 6682.5 23.4 PILOT 170 -5 COPILOT 170 -5 OIL 112.5 8 FURL(min)450 30 7585.0	154436.2 - 850 - 850 10000 _18500_ 177956.20 25.4
REARWARD C.G. WEIGHT 6682.5 23.6 PILOT 170 5 OIL 112.5 8 FUEL(min) 450 50 PASSENGER 170 62 PASSENGER 540 102 BAGGAGE 75 169	154436,20 850 10000 15500 10540 54680 12675

12675 234851.20

C.G. LIMITS 2055 TO 55.0 ALL LOADING WITH IN LIMITS EMPTY WEIGHT 6682.5 USEFUL LOAD 1318 EMPTY C.G. 25.4

### Page 3 0 + 5



#### LOADING SCHEDULES



" I NoTe: APPRO	VED FORWARD EX	IRENE 20,5 NO	TO HPPROVED REHRWAA	ON EXPERIE 330
TUM	WEIGHT	ARM	MOMENT	MEATHER E STORY
AIRCRAFT EMPTY	6682.5	23,1	154436,20	
feilor	170	- 5	850	
CRIAW	170	-5	850	
CIL	112.5	1-8	10000	22.8
FULL /OOGAL	600	+30	18000	
BAGGAGE				
PASSENGER				
PASSENGER				
DTAL	77350		184136,20	

#### LOADING SCHEDULES

. : # 2				
METI	VEIGET	ARM	MOMENT	
AIRCRAFT EMPTY	6682.5	23./	154436,20	
PILOT	170	-5	850	
CREW	170	- 5	850	
OIL	112.5	+8	10000	247
FUEL 100GAL	600	+30	1800 n	
PAGGAGE	50	+169	8450	
PASSFINGER	170	+ 24	40811	
PAS. WGER				
TOTAL	7955,0	1,354	196666,20	

## LOADING SCHEDULES

ITEM	WEIGHT	ARM	FIGMENT	<del></del>
ATRORAFT EMPTY	6682,5	23,1	154436,20	
PILOT	170	-5	250	
CREW	170	-5	850	26.5
OIL	112.5	+8	10000	760
FUEL 120 GAL	720	+30	21600	-
BAGGAGE	145	469	24505	
PASSENGER				
PASSENGER				7
TOTAL	8000		21224120	143
eg projet	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	Section 1985	1001100	أسنه

## Page 4 0+ 5 ,



#### LOADING SCHEDULES

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	ED FORWAND EX	T. 20,5 NOTE	'APPROVED REARWARD	EXT. 33,0
TTEM	VEIGHT	ARM	MOMENT	
AIR MAFT EMETY	6682.5	23,1	15443620	
FILOR	170	- 5	850	
CREW				7~
OIL 1000 T	1/2.5	+ 8	10000	25.0
FUEL 100GAL	600	<del>≠30</del>	18000	
BAGGACE				
PASSENGER	170	7.24	4080	
PASSENCER	7/0	+62	10540	
OTAL DTAL	1903		197906,20	

#### LOADING SCHEDULES

<u> </u>				, -
ITEM	WEIGHT	ARM	MOMENT	、
AIPCRAFT EMPTY	6682.5	23.1	154436,20	
PLIOT	170	- 5	850	
CREW			1	21
OIL	112,5	+8	10000	26,
FUEL 150GAL	900	+30	27000	
PAGGAGE	135	+169	22815	
PASSENGER		) <sub>V1</sub>		
PAS: NGER	- SZ			
TOTAL	8000		215/0/120	

#### LOADING SCHEDULES

		* *		
LIEM	WEIGHT .	ARM	NOMENT	
AIRCRAFT EMPTY	6682,5	23,1	154436.20	
PILOT	170	-5	850	
CREW				24.5
OIL	112.5	+8	10000	
FUEL 172GAL	1032	+30	30960	
BAGGAGE	3	1169	507	
PASSENGER				
PASSENGER	,			ي , ل
TOTAL	8000		196753.20	154
	· · · · · · · · · · · · · · · · · · ·		<del></del>	` ' '

		GRUMMAN GOOSE G-21A B-100 N. 8	<u>्रकार ते । त</u> !शंग		<del></del>
		GROTHAR GOSE G-EIR D-100			
	TTEM		WEIGHT	ARM	6. 18 6 18 .
•	302	Two controllable metal (Ham. Std.) Hubs 200; Blades 6167A-12	308	<b>-</b> 52	현실 1988 1981 1881
	101	Right N53865 Two engine ring cowls	56	<b>-</b> 36	
	102	Two oil radiators VAP No. U3160	26	0	\$1. 42
	103	Two starters E-80	77	-12	
	108	Press. fire ext. (Lux Type A-1)	21	<b>-</b> 33	(1) (1) (1) (1) (1)
7	111	Two P&W Engines Model H985-14B	in the second		
	106	Two main wheel brake assemblies 30 x 7, Type II with 32 x 8 10-ply rating tires (a) Bendix Type B (b) Goodrich (formerly Hayes) Model 3070A wheel assy. G-3-56A Brake assy. H-2-102			
	110	Wing tip floats (Edo N-1760)	87		•
	229	Electrically or manually controlled landing gear retracting mechanism	43	- 5	
	305	12.50 in smooth contour tail wheel with Goodrich 6-ply special H.D. tire	•		
	203	Generator 50 amp (Eclipse E-5)	17	-23	
(F)	105	Battery, 38 amp hour	37-1/2	- 7	
	·	One ARC Ommi One Range Receiver 274N One ADF ARN-7 One 17E-2 Transmitter, Collins Two T-11 Transmitter ARC	9 9 43 57 6 <b>-</b> 1/2	+29 +23 +31 +35 +40	-
	215	Landing light, left wing	<b>8</b>	+60	
	205	Two chairs (b) Writing table (2) (c) Two chairs	60 20 60	+62 +79 +102	
	206	Toilet	10	+184	
٠	225	Cabin heater manifold	9		
	217	Anchor 12 lbs. & 100 ft. manila 1-3/4 line.	19	<b>-</b> 88	, 1
•	218	Portable fire extinguisher	. 8	<del>+</del> 183	1 7
	221	Engine work shelf One ADF Inverter	9 21-3/4	+189 +185	

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一个理论

# U. S. DEPARTMENT OF COMMERCE CIVIL AERONAUTICS ADMINISTRATION

(To be completed by a	AFT INSPECTION REPORT  CAA representative or approved repair station)
To I will ali I I I I I I I I I I I I I I I I I I I	of this form has been inspected and found to conform to the following:
as a superior of the second se	의 이렇게 하면 나는 나는 어떻게 되었다면 다른 것도 되었다. 그런 그런 그런 그런 그 그는 그는 그는 그는 그를 보고 있다. 그는 그를 보고 있다면 보다 보고 있다면 보다 보고 있다면 보다 되었다.
	BASIS
AIRCRAFT SPECIFICATION NO.	THROUGH SHEET REVISION NO.
b. PAIRCRAFT LISTING PAGE NO. 98	사람들은 살림의 사용한 사용한 생활을 살살을 살살을 살살이 살려 가장 아니는 아니는 아니는 아니는 아니는 아니는 아니는 아니는 아니는 아니는
CO	856THROUGH CARD NO
d. CIVIL AIR REGULATION PART 8 (MODIFIED TYPE	YEAR)
A 1.50 中国共和国共和国共和国共和国共和国共和国共和国共和国共和国共和国共和国共和国共和国	表表的问题的知识特别的数据的相对的 4. (2) (2) (2) (2) (2) (2) (2) (2) (2) (2)
AIRCRAFT AND ENGINE OPERATING REC	
. AIRCRAFT NEW-NO PREVIOUS OPERATION OR	MAINTENANCE HISTORY
b. COMPLIANCE WITH APPLICABLE AIRWORTHINESS	S DIRECTIVES RECORDED
AIRCRAFT RECORDS INDICATE THE AIRFRAME	HAS BEEN OPERATED A TOTAL OF 2/12 HOURS
d. E ENGINE RECORDS INDICATE THE FOLLOWING O	PERATION的製造商業製造企業製造企業製造工工工工工工工工工工工工工工工工工工工工工工工工工工工工工
SERIAL NO. 19387	TOTAL HOURS 758.30 (Lighten)
	TOTAL HOURS 797050 (Right ene)
SERIAL NO. TP2/020V	* 中央の 利力ははあればます。中央のです。
SERIAL NO	TOTAL HOURS
SERIAL NO.	TOTAL HOURS
	A CA 210
. PREVIOUS INSPECTION RECORD (INSPEC	CTION RECORDED ON FORM ACA-313)
a. LAST AIRWORTHINESS INSPECTION CONDUCTED	3/1/57_
	(DAYE)
BY AIRCRAFT MANUFACTURER	
BY APPROVED REPAIR STATION, CERTIF	ICAJE NO. 101 41 P13 61224
BY MECHANIC, CERTIFICATE NO.	Nangeryoru III
b. PERIODIC AIRCRAFT INSPECTION REPORT, FOR	M ACA-319 WAS BETURNED TO OWNER
The state of the s	the grant Market and Artifaction and Artifacti
. AIRWORTHINESS DOCUMENTS ISSUED	OR REVIEWED
a. OPERATION LIMITATIONS, FORM ACA-309, WAS	ISSUED (COPY ATTACHED)
b. CURRENT OPERATION LIMITATIONS, FORM ACA	A-309, IS AVAILABLE IN AIRCRAFT
C. IN CURRENT APPROVED AIRPLANE FLIGHT MANUA	AL IS AVAILABLE IN AIRCRAFT
d. O CURRENT WEIGHT AND BALANCE INFORMATION	N IS AVAILABLE IN AIRCRAFT
e. IN THIS INSPECTION HAS BEEN RECORDED IN THE	E AIRCRAFT RECORDS
e. IN THIS INSPECTION HAS BEEN RECORDED IN THE	AND LOCAL DESCRIPTION OF THE PARTY OF THE PA
1. TO CERTIFICATE OF AIRWORTHINESS, FORM ACA-	1362 Dalier Co State calion
g. PREVIOUS FORM ACA-1362 WAS ISSUED TO EXP	TRE (CATE)
nv	
(NAME OF ISSUING REPRESENT.	MMM Application of the second
5. CAA APPROVED REPAIR STATION CERT	TIFICATION
	been inspected under the authority accorded certificated repair station
The aircraft described on the reverse has	Substitution of the property o
No by CAR 52 and was	loung to be:
	Military Colors of the Colors
AIRWORTHY	取扱うをはないできます。
- パー・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・	(DATE)
- パー・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・	(REPAIR STATION AUTHORIZED SIGNATURE) (DATE)
UNAIRWORTHY	(REPAIR STATION AUTHORIZED SIGNATURE)
UNAIRWORTHY	(REPAIR STATION AUTHORIZED SIGNATURE)
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UNAIRWORTHY  6. CAA REPRESENTATIVE CERTIFICATION I HAVE INSPECTED THE AIRCRAFT DESCRIBED ON T	REPAIR STATION AUTHORIZED SIGNATURE)  L  HE REVERSE AND FOUND IT AIRWORTHY UNAIRWORTHY (Cack appropriate Ects)
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UNAIRWORTHY  6. CAA REPRESENTATIVE CERTIFICATION  I HAVE INSPECTED THE AIRCRAFT DESCRIBED ON T  DESIGNEE'S SIGNATURE	(Cach oppropried Ecra)  DESIGNATION NO.  DATE
UNAIRWORTHY  6. CAA REPRESENTATIVE CERTIFICATION  I HAVE INSPECTED THE AIRCRAFT DESCRIBED ON T  DESIGNEE'S SIGNATURE	(REPAIR STATION AUTHORIZED SIGNATURE)  HE REVERSE AND FOUND IT   DAIRWORTHY   UNAIRWORTHY (Carc epipropriate Rest)  DESIGNATION NO.   DATE     ACCEPTED
UNAIRWORTHY  6. CAA REPRESENTATIVE CERTIFICATION  I HAVE INSPECTED THE AIRCRAFT DESCRIBED ON T  DESIGNEE'S SIGNATURE	(REPAIR STATION AUTHORIZED SIGNATURE)  THE REVERSE AND FOUND IT   DAIRWORTHY   UNAIRWORTHY     DESIGNATION NO.   DATE   ACCEPTED     CAR DESIGNATION NO.   DATE   REINSPECTED
UNAIRWORTHY  6. CAA REPRESENTATIVE CERTIFICATION  I HAVE INSPECTED THE AIRCRAFT DESCRIBED ON T  DESIGNEE'S SIGNATURE	(REPAIR STATION AUTHORIZED SIGNATURE)  THE REVERSE AND FOUND IT AIRWORTHY UNAIRWORTHY (Cach appropriate lices)  DESIGNATION NO. DATE  DATE  ACCEPTED
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UNAIRWORTHY  6. CAA REPRESENTATIVE CERTIFICATION  I HAVE INSPECTED THE AIRCRAFT DESCRIBED ON T  DESIGNEE'S SIGNATURE	(REPAIR STATION AUTHORIZED SIGNATURE)  THE REVERSE AND FOUND IT   AIRWORTHY   UNAIRWORTHY     DESIGNATION NO.   DATE   ACCEPTED     CAR DESIGNATION NO.   DATE   REINSPECTED
UNAIRWORTHY  6. CAA REPRESENTATIVE CERTIFICATION I HAVE INSPECTED THE AIRCRAFT DESCRIBED ON T  DESIGNEE'S SIGNATURE  AVIATION SAFETY AGENTS SIGNATURE	(REPAIR STATION AUTHORIZED SIGNATURE)  THE REVERSE AND FOUND IT   DAIRWORTHY   UNAIRWORTHY     DESIGNATION NO.   DATE   ACCEPTED     CAR DESIGNATION NO.   DATE   REINSPECTED
UNAIRWORTHY  6. CAA REPRESENTATIVE CERTIFICATION  I HAVE INSPECTED THE AIRCRAFT DESCRIBED ON T  DESIGNEE'S SIGNATURE  AVIATION SAFETY AGENT'S SIGNATURE	(REPAIR STATION AUTHORIZED SIGNATURE)  THE REVERSE AND FOUND IT DEALERWORTHY UNAIRWORTHY (Cache oppropriede Ecra)  DESIGNATION NO. DATE  TRUES  ASDOTI. ACCEPTED REINSPECTED SPOT CHECKED
UNAIRWORTHY  6. CAA REPRESENTATIVE CERTIFICATION I HAVE INSPECTED THE AIRCRAFT DESCRIBED ON T  DESIGNEE'S SIGNATURE  AVIATION SAFETY AGENTS SIGNATURE  AVIATION SAFETY AGENTS SIGNATURE	HE REVERSE AND FOUND IT AIRWORTHY UNAIRWORTHY  DESIGNATION NO. DATE  CAR DESIGNATION NO. DATE  REVERSE AND FOUND IT ACCEPTED  REINSPECTED  REINSPECTED
UNAIRWORTHY  6. CAA REPRESENTATIVE CERTIFICATION  I HAVE INSPECTED THE AIRCRAFT DESCRIBED ON T  DESIGNEE'S SIGNATURE  AVIATION SAFETY AGENT'S SIGNATURE	(REPAIR STATION AUTHORIZED SIGNATURE)  THE REVERSE AND FOUND IT DEALERWORTHY UNAIRWORTHY  (Cache oppropriede Res)  ACCEPTED ACCEPTED  RESSENATION NO. DATE  ASDO II. SPOT CHECKED
UNAIRWORTHY  6. CAA REPRESENTATIVE CERTIFICATION I HAVE INSPECTED THE AIRCRAFT DESCRIBED ON T  DESIGNEE'S SIGNATURE  AVIATION SAFETY AGENT SHIGNARIDE  WATTACHMENT	(REPAIR STATION AUTHORIZED SIGNATURE)  THE REVERSE AND FOUND IT DEALERWORTHY UNAIRWORTHY (Cache oppropriede Ecra)  DESIGNATION NO. DATE  TRUES  ASDOTI. ACCEPTED REINSPECTED SPOT CHECKED