



US Department of Transportation  
Federal Aviation Administration

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

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

Electronic Tracking Number

For FAA Use Only

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

1. Aircraft	Nationality and Registration Mark USA N687AV	Serial No. 3449180	
	Make Piper	Model PA-34 Seneca	Series SENECA V
2. Owner	Name (As shown on registration certificate) HURE NIKOLA	Address (As shown on registration certificate) Address 13002 ZACHARY AVE	
		City Mc Farland	State CA
		Zip 93250-9699	Country USA

3. For FAA Use Only

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

6. Conformity Statement

A. Agency's Name and Address		B. Kind of Agency	
Name	MARK W. WIEBE	<input checked="" type="checkbox"/>	U. S. Certificated Mechanic
Address	619 ARVIN ST.		Foreign Certificated Mechanic
City	Bakersfield State CA		Certificated Repair Station
Zip	93308 Country USA		Certificated Maintenance Organization
			Manufacturer
			C. Certificate No.
			561868073IA

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

Extended range fuel per 14 CFR Part 43 App. B <input type="checkbox"/>	Signature/Date of Authorized Individual  December 18, 2009 Mark W. Wiebe
--	--

7. Approval for Return to Service

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

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

Certificate or Designation No. 561868073IA	Signature/Date of Authorized Individual  December 18, 2009 Mark W. Wiebe
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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.)*

USA N687AV

12/18/2009

Nationality and Registration Mark

Date

INSTALLED UNISON SLICKSTART MAGNETO BOOSTER SYSTEM STC# SA593CH. SYSTEM INSTALLED IN ACCORDANCE WITH SLICK INSTALLATION INSTRUCTIONS SL2-96 REV. F DATED 7/24/06. REVISED EQUIPMENT LIST. WEIGHT CHANGE NEGLIGIBLE.  
CONTINUED AIRWORTHINESS: NO SPECIAL INSPECTIONS REQUIRED. SYSTEM TO BE INSPECTED DURING REGULAR SCHEDULED INSPECTIONS.

END

Additional Sheets Are Attached

United States of America  
 Department of Transportation - Federal Aviation Administration

# Supplemental Type Certificate

Number SA593CH

This certificate, issued to

Unison Industries  
 530 Blackhawk Park Avenue  
 Rockford, IL 61104

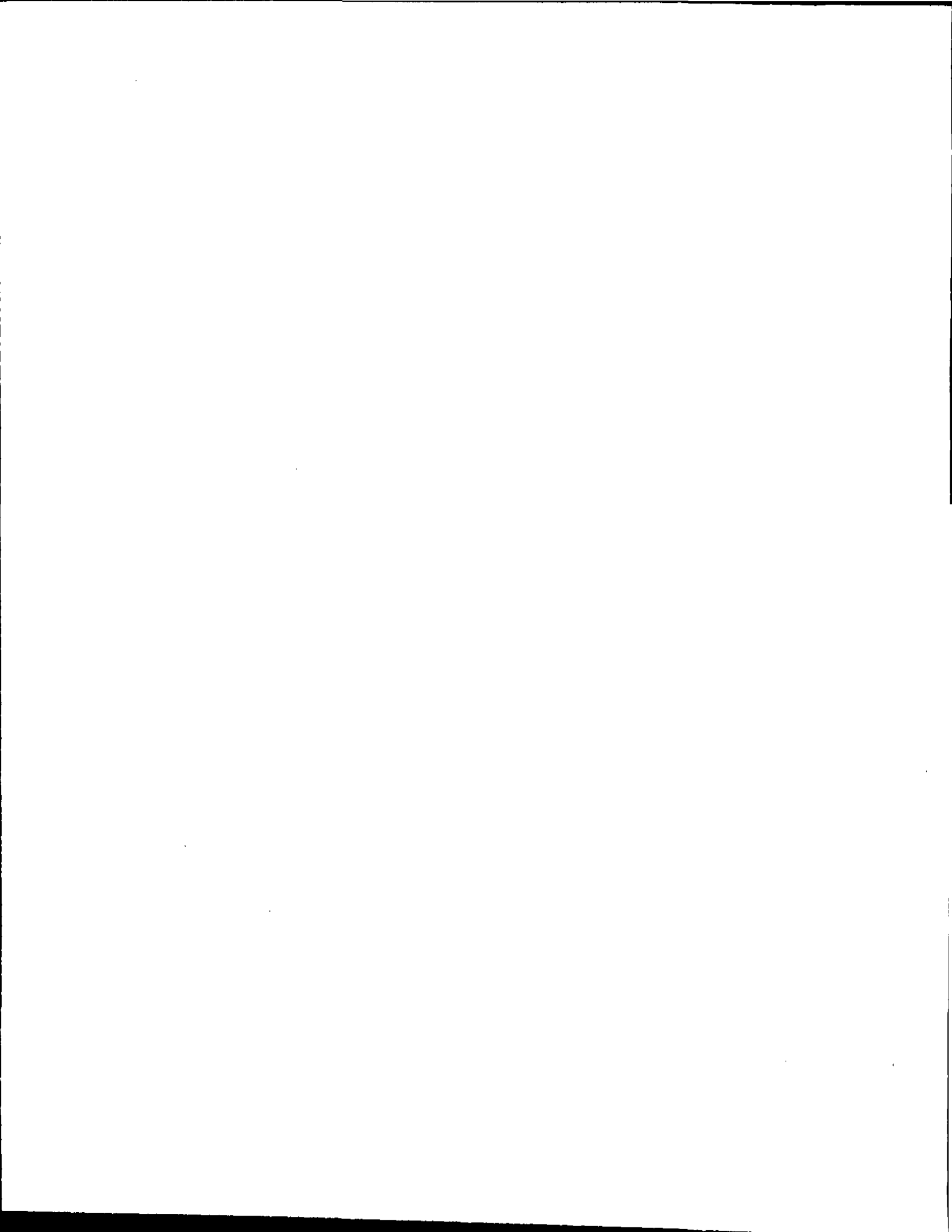
certified that the change in the type design for the following product with the limitation and conditions therefor as specified hereon meets the airworthiness requirements of Part \* of the \* Regulations. \*

Original Product - Type Certificate Number: \* \* See attached FAA Approved Model List (AML) No. SA593CH for list of approved airplane models and applicable airworthiness regulations

Description of Type Design Change:

Install Unison SlickSTART™ magneto booster system in accordance with Slick Installation Instructions as listed on AML No. SA593CH, or later FAA approved Revision.

<b>ISSUED</b>			<b>REVISED</b>			<b>UNISON INDUSTRIES</b> 530 Blackhawk Park Avenue Rockford, Illinois, U.S.A. 61104 © 2006 Unison Industries www.unisonindustries.com	<b>PAGE NO.</b>	<b>REVISION</b>
MO	DAY	YEAR	MO	DAY	YEAR		17 of 39	F
10	31	96	07	24	06			



*Limitation and Conditions:*

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. SA593CH, or later FAA approved revision, must be maintained as part of the permanent records for the modified aircraft.
3. SlickSTART™ Model SS1001 may only be used with Slick 4200, 6200, 4300, 6300 series magnetos.
4. SlickSTART™ Model SS1002 may only be used with TCM/Bendix S-20, S-200, S-1200 series magnetos.
5. Do not install SlickSTART™ Model SS1001 with TCM/Bendix magnetos.
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 surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.*

*Date of application:* December 18, 1995

*Date reissued:*

*Date of issuance:* January 24, 1997

*Date amended:* May 12, 1997; March 9, 1998  
 April 20, 2000; March 12, 2004  
 July 31, 2006

*By direction of the Administrator*

*Signed original on file at Unison*

*(Signature)*

Thaddeus D. Krolicki, Jr.  
 Manager, Propulsion Branch  
 Chicago Aircraft Certification Office

*(Title)*

*This certificate may be transferred in accordance with FAR 21.47*

ISSUED			REVISED			UNISON INDUSTRIES 530 Blackhawk Park Avenue Rockford, Illinois, U.S.A. 61104 © 2006 Unison Industries www.unisonindustries.com	PAGE NO.	REVISION
MO	DAY	YEAR	MO	DAY	YEAR			
10	31	96	07	24	06	18 of 39	F	



FAA APPROVED MODEL LIST (AML) NO. SA593CH  
 UNISON INDUSTRIES  
 FOR INSTALLING SlickSTART™ MAGNETO BOOSTER SYSTEM

Date of Issuance January 24, 1997

LINE	AIRCRAFT MAKE	AIRCRAFT MODEL	ORIGINAL TYPE CERTIFICATE NUMBER	CERTIFICATION BASIS FOR ALTERATION	INSTALLATION INSTRUCTIONS		AFM SUPP NO./DATE	AML AMEND DATE
					NUMBER	REV. NO./DATE		
155	The New Piper Aircraft Inc.	PA-34-200, -204T, -220T, -220T	A750	FAR 21	SL2-96	Rev. F 7/24/96	N/A	7/31/96
156	The New Piper Aircraft Inc.	PA-36-285, PA-36-300, PA-36-375 (Normal Category)	A850	FAR 23	SL2-96	Rev. F 7/24/96	N/A	7/31/96
157	The New Piper Aircraft Inc.	PA-36-285, PA-36-300, PA-36-375 (Restricted Category)	A1050	FAR 23	SL2-96	Rev. F 7/24/96	N/A	7/31/96
158	The New Piper Aircraft Inc.	PA-36-112	A1050	FAR 23	SL2-96	Rev. F 7/24/96	N/A	7/31/96
159	The New Piper Aircraft Inc.	PA-44-160, PA-44-160T	A1950	FAR 23	SL2-96	Rev. F 7/24/96	N/A	7/31/96
160	The New Piper Aircraft Inc.	PA-46-310S, PA-46-350S	A2550	FAR 23	SL2-96	Rev. F 7/24/96	N/A	7/31/96
161	Birtle, J.C.	Birtle (Johnson) Rocket 185	770	CAR 4a	SL2-96	Rev. F 7/24/96	N/A	7/31/96
162	Prop-Jets Inc.	200, 200A, 200B, 200C, 200D, 400	2216	CAR 3	SL2-96	Rev. F 7/24/96	N/A	7/31/96
163	Joe Panlin	CP-40	A 720	CAR 4a	SL2-96	Rev. F 7/24/96	N/A	7/31/96
164	Raytheon Aircraft Company	A1A, B19, M19A, 23, A23, A23L, A23-10, A19-24, B23, C23, A24, B24S, B24P, C24R	A100	CAR 3	SL2-96	Rev. F 7/24/96	N/A	7/31/96
165	Raytheon Aircraft Company	B3, A35, B35, C35, D35, E35, F35, G35, 35P	A 777	CAR 3	SL2-96	Rev. F 7/24/96	N/A	7/31/96

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<b>ISSUED</b>			<b>REVISED</b>			<b>UNISON INDUSTRIES</b> 530 Blackhawk Park Avenue Rockford, Illinois, U.S.A. 61104 © 2006 Unison Industries www.unisonindustries.com	<b>PAGE NO.</b>	<b>REVISION</b>
MO	DAY	YEAR	MO	DAY	YEAR		34 of 39	F
10	31	96	07	24	06			







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

**INSTRUCTIONS:** Print or type all entries. See FAR 43.9 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).

<b>1. Aircraft</b>	Make Piper	Model PA-34-220T
	Serial No. 3449180	Nationality and Registration Mark N687AV
<b>2. Owner</b>	Name (As shown on registration certificate)  CALIFORNIA NATURAL PRODUCTS	Address (As shown on registration certificate) 1250 EAST LATHROP RD LATHROP, CA, 95330-9709

### 3. For FAA Use Only

4. Unit Identification				5. Type	
Unit	Make	Model	Serial No.	Repair	Alteration
AIRFRAME	~~~~~ (As described in Item 1 above) ~~~~~				X
POWERPLANT					
PROPELLER					
APPLIANCE	Type				
	Manufacturer				

### 6. Conformity Statement

<b>A. Agency's Name and Address</b> Executive AutoPilots, Inc. 5839 Freeport Blvd. Sacramento, CA 95822	<b>B. Kind of Agency</b> <input type="checkbox"/> U.S. Certified Mechanic <input type="checkbox"/> Foreign Certified Mechanic <input checked="" type="checkbox"/> Certificated Repair Station <input type="checkbox"/> Manufacturer	<b>C. Certificate No.</b> E5VR306N RAD-1, L-RAD, L-INS, L-AF
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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.

Date  10-24-2007	Signature of Authorized Individual 
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### 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**

BY	FAA Flt. Standards Inspector	Manufacturer	Inspection Authorization	Other (Specify)
	FAA Designee	<input checked="" type="checkbox"/> Repair Station	Person Approved by Transport Canada Airworthiness Group	
Date of Approval or Rejection 10-24-2007		Certificate or Designation No. E5VR306N		Signature of Authorized Individual 

## 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.*

### B. Description of Work Accomplished

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

N687AV

Hobbs: 1495.7

Date: 10/22/2007

This alteration is to perform a WAAS upgrade to a previously installed Garmin GNS 430 and install a new antenna in accordance with STC SA01695SE. This aircraft is on the Approved Model List. The STC covers all devices interfaced in this installation.

Removed: GA 56 antenna

Installed:

Garmin GA 35 WAAS- GPS Antenna PN: 013-00235-00 TSO C144, C146a

Returned the existing GNS 430 GPS to Garmin for the WAAS upgrade. Re-installed the Garmin GNS 430W in #3 position of avionics stack as Nav/Com #2. Installed the GA 35 WAAS-GPS Antenna in accordance with the Garmin installation manual PN 190-00569-00 Rev. E dated November 2006, and STC Master Data List PN 005-C-0373-00 Rev. E.

The system is interfaced with a new Garmin GA 35 GPS Antenna installed on top of aircraft fuselage with new RG 400 coax cable and an appropriate doubler plate.

The system is coupled to aircraft avionics bus through a 5 amp circuit breaker labeled "COM 1" for COM power and a 5 amp circuit breaker labeled "GPS" for GPS power.

A correlation check was completed IAW FAR 43 Appendix E.

An Electrical Load Analysis was performed IAW AC 43.13-1B, Chapter 11, and found not to exceed 80% of alternator systems maximum continuous output.

The aircraft's Weight and Balance and Equipment List were revised and placed into the aircraft's records.

In accordance with FAR 23-1301 and 23.1431, a complete ground functional test was completed and the equipment performed satisfactorily and did not adversely affect existing components or systems in the aircraft.

An FAA approved GNS 400W Series Flight Manual Supplement Dated December 21, 2006, PN 190-00356-63 Rev. B, was placed in the aircraft Flight Manual.

The Garmin GNS 430 Pilot Guide PN: 190-00356-00 Rev A, dated November 2006, was placed in the aircraft and must be available to the flight crew whenever navigation is predicated on the use of the system.

See the Garmin 400/500 series Optional Displays Pilot's Guide Addendum PN 190-00356-31 Rev. A dated October, 2006, or later for information on the terrain advisory.

Also see Display Interfaces Pilot's Guide Addendum PN 190-00356-30, Rev. A dated October 2006, or later, for information pertaining to the traffic advisory system.

This GPS Installation is not to be used for navigation until a functional flight evaluation has been successfully accomplished to verify equipment accuracy.

Instructions for continued airworthiness required a visual inspection and operational test of this equipment annually in accordance with manufacturer's recommendations and IAW FAR 43 Appendix D.

-----END-----

A Functional Flight Evaluation was performed in accordance with AC 20.138A Par.8c(2) (iv) and found to be within limits.

ACCURACY TEST ACCOMPLISHED ON 10-24-2007

BY: 

CERTIFIED REPAIR STATION NO E5VR306N

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

**INSTRUCTIONS:** Print or type all entries. See FAR 43.9 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).

<b>1. Aircraft</b>	Make <p style="text-align: center;">Piper</p>	Model <p style="text-align: center;">PA-34-220T</p>
	Serial No. <p style="text-align: center;">3449180</p>	Nationality and Registration Mark <p style="text-align: center;">N687AV</p>
<b>2. Owner</b>	Name (As shown on registration certificate) <p style="text-align: center;">CALIFORNIA NATURAL PRODUCTS</p>	Address (As shown on registration certificate) 1250 EAST LATHROP ROAD LATHROP, CA 95330-9709

### 3. For FAA Use Only

4. Unit Identification				5. Type	
Unit	Make	Model	Serial No.	Repair	Alteration
AIRFRAME	~~~~~ (As described in Item 1 above) ~~~~~				X
POWERPLANT					
PROPELLER					
APPLIANCE	Type				
	Manufacturer				

### 6. Conformity Statement

<b>A. Agency's Name and Address</b> Executive AutoPilots, Inc. 5839 Freeport Blvd. Sacramento, CA 95822	<b>B. Kind of Agency</b> <input type="checkbox"/> U.S. Certified Mechanic <input type="checkbox"/> Foreign Certified Mechanic <input checked="" type="checkbox"/> Certificated Repair Station <input type="checkbox"/> Manufacturer	<b>C. Certificate No.</b> E5VR306N RAD-1, L-RAD, L-INS, L-AF
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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.

Date <p style="text-align: center;">10-24-2007</p>	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

<b>BY</b>	FAA Fit. Standards Inspector	Manufacturer	Inspection Authorization	Other (Specify)
	FAA Designee	<input checked="" type="checkbox"/> Repair Station	Person Approved by Transport Canada Airworthiness Group 	
Date of Approval or Rejection <p style="text-align: center;">10-24-2007</p>		Certificate or Designation No. <p style="text-align: center;">E5VR306N</p>	Signature of Authorized Individual 	

## 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.

### B. Description of Work Accomplished

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

N687AV

Hobbs: 1495.7

Date: 10/22/2007

This alteration is to perform a WAAS upgrade to a previously installed Garmin GNS 530 and install a new antenna in accordance with STC SA01695SE. This aircraft is on the Approved Model List. The STC covers all devices interfaced in this installation.

Removed: GA 56 antenna

Installed:

Garmin GA 35 WAAS- GPS Antenna PN: 013-00235-00 TSO C144, C146a

Returned the existing GNS 530 GPS to Garmin for the WAAS upgrade. Re-installed the Garmin GNS 530W in #2 position of avionics stack as NAV/COM # 1. Installed the GA 35 WAAS-GPS Antenna in accordance with the Garmin installation manual PN 190-00569-00 dated November 2006, and STC Master Data List PN 005-C-0373-00 Rev. E.

The system is interfaced with a new Garmin GA 35 GPS Antenna installed on top of aircraft fuselage with new RG 400 coax cable and an appropriate doubler plate.

Added wiring to connect the analog lateral and vertical deviation, flags, to/from and ILS/GPS approach outputs from the Garmin to the Sandel SN 3308 IAW SIL 3308-05 Rev. B dated 4/27/2007.

The system is coupled to aircraft avionics bus through a 5 amp circuit breaker labeled "COM 1" for COM power and a 5 amp circuit breaker labeled "GPS" for GPS power.

A correlation check was completed IAW FAR 43 Appendix E.

An Electrical Load Analysis was performed IAW AC 43.13-1B, Chapter 11, and found not to exceed 80% of alternator systems maximum continuous output.

The aircraft's Weight and Balance and Equipment List were revised and placed into the aircraft's records.

In accordance with FAR 23-1301 and 23.1431, a complete ground functional test was completed and the equipment performed satisfactorily and did not adversely affect existing components or systems in the aircraft.

An FAA approved GNS 500W Series Flight Manual Supplement Dated December 21, 2006, PN 190-00357-63 Rev. B, was placed in the aircraft Flight Manual.

The Garmin GNS 530 Pilot Guide PN: 190-00357-00 Rev A, dated Oct. 2006, was placed in the aircraft and must be available to the flight crew whenever navigation is predicated on the use of the system.

See the Garmin 400/500 series Optional Displays Pilot's Guide Addendum PN 190-00356-30 Rev. A dated October 2006, or later for information on the terrain advisory.

Also see Display Interfaces Pilot's Guide Addendum PN 190-00356-31, Rev. A dated October 2006, or later, for information pertaining to the traffic advisory system.

This GPS Installation is not to be used for navigation until a functional flight evaluation has been successfully accomplished to verify equipment accuracy.

Instructions for continued airworthiness required a visual inspection and operational test of this equipment annually in accordance with manufacturer's recommendations and IAW FAR 43 Appendix D.

-----  
END  
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A Functional Flight Evaluation was performed in accordance with AC 20.138 Par.8c(2) (iv) and found to be within limits.

ACCURACY TEST ACCOMPLISHED ON 10-24-2007

BY: 

CERTIFIED REPAIR STATION NO E5VR306N

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

*FAA, WP-27*

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 civil penalty not to exceed \$1,000 for each such violation (Section 901 Federal Aviation Act of 1958).

1. Aircraft	Make PIPER	Model PA-34-220T
	Serial No. 3449180	Nationality and Registration Mark N687AV
2. Owner	Name (As shown on registration certificate) CALIFORNIA NATURAL PRODUCTS	Address (As shown on registration certificate) 1250 EAST LATHROP RD LATHROP, CA 95330-9709

**3. For FAA Use Only**

*(Empty section for FAA use only)*

**4. Unit Identification**

**5. Type**

Unit	Make	Model	Serial No.	Repair	Alteration
AIRFRAME	(As described in Item 1 above)				X
POWERPLANT					
PROPELLER					
APPLIANCE	Type				
	Manufacturer				

**6. Conformity Statement**

A. Agency's Name and Address	B. Kind of Agency	C. Certificate No.
Anoop Grewal Top Gun Aviation Stockton, CA	<input checked="" type="checkbox"/> U.S. Certificated Mechanic	2881576 A&P
	<input type="checkbox"/> Foreign Certificated Mechanic	
	<input type="checkbox"/> Certificated Repair Station	
	<input type="checkbox"/> 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 11/9/06	Signature of Authorized Individual <i>[Signature]</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

BY	FAA Fit. Standards Inspector	Manufacturer	X	Inspection Authorization	Other (Specify)
	FAA Designee	Repair Station		Person Approved by Transport Canada Airworthiness Group	
Date of Approval or Rejection 11/9/06		Certificate or Designation No. 547493873 IA	Signature of Authorized Individual <i>[Signature]</i>		

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

**INSTALLED ONE AIRWOLF FILTER CORP MINISEP AIR/OIL SEPARATOR, STC# SA02268CH ,TO EACH ENGINE IAW AIRWOLF INSTALLATION INSTRUCTIONS, DRAWING AFC-W360, REV "C" ,DATED 8/28/06. WEIGHT AND BALANCE REVISED.**

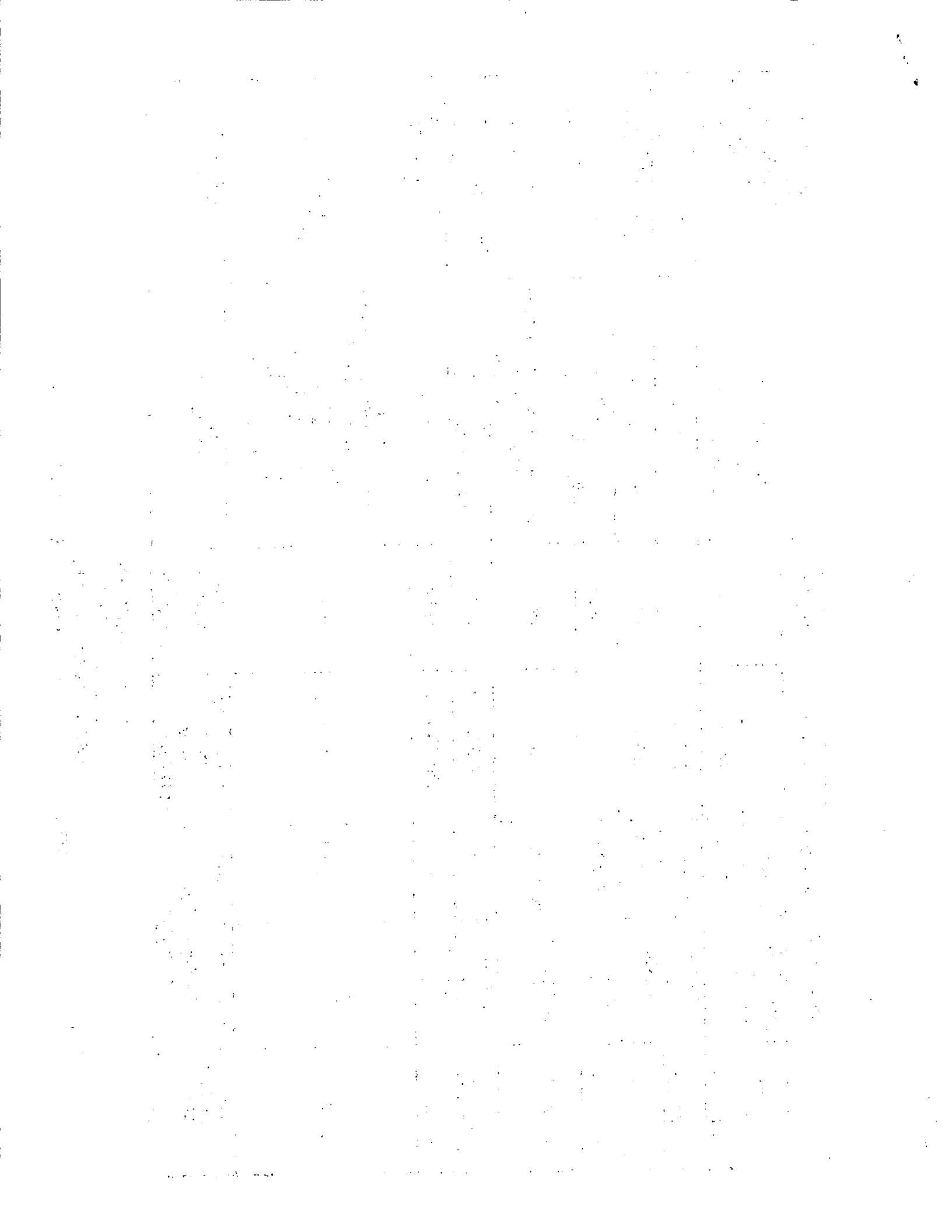
----- END -----

[ ] Additional Sheets Are Attached

**FAA APPROVED MODEL LIST (AML) NO. SA02268CH**  
**AIRWOLF FILTER CORP**  
**FOR INSTALLING**  
**AIR OIL SEPARATOR KIT**

Issue Date: March 30, 2006

AIRCRAFT MAKE	AIRCRAFT MODEL	ORIGINAL TYPE CERTIFICATE NUMBER	CERTIFICATION BASIS FOR ALTERATION	INSTALLATION INSTRUCTIONS		AML AMENDMENT DATE
				NUMBER	REVISION NO. AND DATE	
THE NEW PIPER AIRCRAFT, INC.	PA-28-140, PA-28-150, PA-28-151, PA-28-160, PA-285-160, PA-28-161, PA-28-180, PA-28-181, PA-28R-180, PA-28S-180, PA-28R-200, PA-28R-201, PA-28-201T, PA-28R-201T, PA-28RT-201, PA-28RT-201T, PA-28-235, PA-28-236	2A13	CAR 3, FAR 23	AFC-W360	C 08/28/2006*	08/28/2006
THE NEW PIPER AIRCRAFT, INC.	PA-30, PA-39, PA-40	A1EA	CAR 3, FAR 23	AFC-W360	C 08/28/2006*	08/28/2006
THE NEW PIPER AIRCRAFT, INC.	PA-31, PA-31-300, PA-31-325, PA-31-350	A2SO	CAR 3, FAR 23	AFC-W360	C 08/28/2006*	08/28/2006
THE NEW PIPER AIRCRAFT, INC.	PA-32-260, PA-32S-300, PA-32-300, PA-32R-300, PA-32RT-300, PA-32RT-300T, PA-32-301, PA-32-301T, PA-32R-301, PA-32R-301T	A3SO	CAR 3, FAR 23	AFC-W360	C 08/28/2006*	08/28/2006
THE NEW PIPER AIRCRAFT, INC.	PA-34-200, PA-34-200T, PA-34-220T	A7SO	FAR 23	AFC-W360	C 08/28/2006*	08/28/2006
THE NEW PIPER AIRCRAFT, INC.	PA-36-285, PA-36-300, PA-36-375	A9SO	FAR 23	AFC-W360	C 08/28/2006*	08/28/2006
THE NEW PIPER AIRCRAFT, INC.	PA-38-112	A18SO	FAR 23	AFC-W360	C 08/28/2006*	08/28/2006
THE NEW PIPER AIRCRAFT, INC.	PA-44-180, PA-44-180T	A19SO	FAR 23	AFC-W360	C 08/28/2006*	08/28/2006
THE NEW PIPER AIRCRAFT, INC.	PA-46-310P, PA-46-350P	A25SO	FAR 23	AFC-W360	C 08/28/2006*	08/28/2006
THE WACO AIRCRAFT CO	ASO	ATC 41	ATC 41	AFC-W360	C 08/28/2006*	08/28/2006





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

ASO FSDO-15 **TA**

**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 form 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).

<b>1. Aircraft</b>	Make <b>Piper</b>	Model <b>PA-34-220T</b>
	Serial No. <b>3449180</b>	Nationality and Registration Mark <b>N687AV</b>
<b>2. Owner</b>	Name (As shown on registration certificate) <b>Tony DiBona</b>	Address (As shown on registration certificate) <b>480 Cowper St. 2nd Floor Palo Alto, Ca. 94301</b>

### 3. For FAA Use Only

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

Date **AUG 25 2000** FAA Inspector *Tony Ayers*

**TONY ALFAYA**  
PRINCIPAL AVIONICS INSPECTOR

### 4. Unit Identification

### 5. Type

Unit	Make	Model	Serial No.	Repair	Alteration
AIRFRAME	<i>~~~~~ (As described in item 1 above) ~~~~~</i>				X
POWERPLANT					
PROPELLER					
APPLIANCE	Type				
	Manufacturer				

### 6. Conformity Statement

<b>A. Agency's Name and Address</b> <b>Sun Aviation, Inc.</b> <b>3106 Cherokee Dr.</b> <b>Vero Beach, Fl. 32960</b>	<b>B. Kind of Agency</b> <input type="checkbox"/> U.S. Certificated Mechanic <input type="checkbox"/> Foreign Certificated Mechanic <input checked="" type="checkbox"/> Certificated Repair Station <input type="checkbox"/> Manufacturer	<b>C. Certificate No.</b> <b>ECWR470D</b>
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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.

Date <b>8/28/2000</b>	Signature of Authorized Individual <i>R. C. Peasley</i>
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### 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**

<b>BY</b>	FAA Fit. Standards Inspector		Manufacturer	Inspection Authorization	Other (Specify)
	FAA Designee	X	Repair Station	Person Approved by Transport Canadian Airworthiness Group	
Date of Approval or Rejection <b>8/28/2000</b>		Certificate or Designation No. <b>ECWR470D</b>		Signature of Authorized Individual <i>R. C. Peasley</i>	

## 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.)*

N687AV PIPER PA-34-220T S/N 3449180

Installed Sandel SN 3308 Navigation Display.

The SN 3308 is protected by a 5A Circuit Breaker from the Avionics Buss. The AIS200-35 and RS12-020 Nav Switching Relays are protected by a 1A Circuit Breaker from the Avionics Buss.

Removed Co-Pilot's Directional Gyro. Moved Pilot's ST-180 HSI to location vacated by the Co-Pilot's D G and installed the SN 3308 in the location vacated by the Pilot's ST-180. Interfaced existing GNS-530, GNS-430, DME-451, GMA-340 Mkr Bcn and WX-500 to the SN 3308. The AIS200-35 and RS12-020 were used to switch Nav information to the existing S-TEC Sys 55 Autopilot and the Co-Pilot's ST-180 HSI. Installation interface wiring to the SN 3308 was installed in accordance with Sandel Avionics Installation Manual, Document No. 90106-IM, Rev F(1) dated 6/25/99.

All work was performed in accordance with the Manufacturer's installation instructions, AC 43.13-1B Chapter 7 Sections 1-8, Chapter 11 Sections 3, 6-16 and 17, and Chapter 10; and AC43.13-2A Chapters 2 and 3.

Installation is in compliance with FAR 23.1301, 23.1431 and 23.1309.

FAA Approved Flight Manual Supplement for the Sandel SN 3308 dated AUG 25 2000 was installed in the Aircraft's FAA Approved Pilot's Operating Handbook. In addition, the Sandel Avionics SN 3308 Pilot's Guide was placed on board.

Electrical system load was monitored and found not to exceed the Manufacturer's specifications.

Aircraft Weight and Balance and Equipment List were amended to reflect this installation.

All systems were ground tested and flight checked and found to meet manufacturer's specifications.

Instructions for continuing airworthiness: SN 3308 projection lamp replacement within the first 200 hours and every 200 hours thereafter, or 1 calendar year, whichever comes first.

----- E N D -----

Additional Sheets Are Attached

# SUN AVIATION AVIONICS

3106 Cherokee Dr.  
Vero Beach, Fl. 32960  
(561)567-0603

## UPDATED WEIGHT & BALANCE/EQUIPMENT LIST

Reg. Number: N687AV  
Make/Model: Piper PA-34-220T  
Year: 2000  
Serial Number: 3449180

Date: 08-26-2000  
Hobbs: 16.5  
Max Weight: 4773  
Work Order: 11800

New A/C Empty Weight: 3637.10  
New A/C Empty C.G.: 88.81  
New A/C Useful Load: 1135.90

Description	Serial Number	Weight	Arm	Moment	Installed	Removed
Previous Aircraft Empty	3449180	3634.50	88.80	322730.9	n/a	n/a
<b>Removed</b> C/P 4000B-26 DG	T57725L	2.40	64.70	155.3		X
<b>Installed</b> Sandel SN 3308	2274	3.00	65.00	195.0	X	
AIS200-35	11032	1.00	110.00	110.0	X	
RS12-020	1415	1.00	116.00	116.0	X	
<b>New Aircraft Values</b>		3637.10	88.81	322996.6		

  
 R. C. Peavley, ECWR470D

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 311  
LECTURE 10  
MAY 19, 1999

1. Introduction  
2. Review of Newton's Laws  
3. Kinematics  
4. Dynamics  
5. Energy and Work  
6. Momentum  
7. Rotational Motion  
8. Oscillations  
9. Waves  
10. Relativity



U.S. Department of Transportation  
Federal Aviation Administration

### APPLICATION FOR AIRWORTHINESS CERTIFICATE

INSTRUCTIONS - Print or type. Do not write in shaded areas; these are for FAA use only. Submit original only to an authorized FAA Representative. If additional space is required, use attachment. For special flight permits complete Sections II and VI as applicable.

I. AIRCRAFT DESCRIPTION	1. REGISTRATION MARK <b>N687AV</b>	2. AIRCRAFT BUILDER'S NAME (Make) <b>PIPER</b>	3. AIRCRAFT MODEL DESIGNATION <b>PA-34-220T</b>	4. YR. MFR. <b>2000</b>	FAA CODING <b>7103420</b> <b>17029</b>
	5. AIRCRAFT SERIAL NO. <b>3449180</b>	6. ENGINE BUILDER'S NAME (Make) <b>CONTINENTAL</b>	7. ENGINE MODEL DESIGNATION <b>TSIO-360-RB1B / LTSIO-360-RB1B</b>		
	8. NUMBER OF ENGINES <b>2</b>	9. PROPELLER BUILDER'S NAME (Make) <b>McCAULEY</b>	10. PROPELLER MODEL DESIGNATION <b>3AF32C522 / 3AF32C523</b>		11. AIRCRAFT IS (Check if applicable) <input type="checkbox"/> EXPORT <input checked="" type="checkbox"/> IMPORT

II. CERTIFICATION REQUESTED	APPLICATION IF HEREBY MADE FOR: (Check applicable items)																
	A	1	<input checked="" type="checkbox"/>	STANDARD AIRWORTHINESS CERTIFICATE (Indicate category)	<input checked="" type="checkbox"/>	NORMAL	<input type="checkbox"/>	UTILITY	<input type="checkbox"/>	ACROBATIC	<input type="checkbox"/>	TRANSPORT	<input type="checkbox"/>	GLIDER	<input type="checkbox"/>	BALLOON	
	B	SPECIAL AIRWORTHINESS CERTIFICATE (Check appropriate items)															
	N/A	2	LIMITED														
		5	PROVISIONAL (Indicate class)	1	CLASS I												
				2	CLASS II												
		3	RESTRICTED (Indicate operation(s) to be conducted)	1	AGRICULTURE AND PEST CONTROL		2	AERIAL SURVEYING		3	AERIAL ADVERTISING						
				4	FOREST (Wildlife conservation)		5	PATROLLING		6	WEATHER CONTROL						
				7	CARRIAGE OF CARGO		0	OTHER (Specify)									
		4	EXPERIMENTAL (Indicate operation(s) to be conducted)	1	RESEARCH AND DEVELOPMENT		2	AMATEUR BUILT		3	EXHIBITION						
4				RACING		5	CREW TRAINING										
0	TO SHOW COMPLIANCE WITH FAR																
8	SPECIAL FLIGHT PERMIT (Indicate operation to be conducted, then complete Section VI or VII as applicable on reverse side)	1	FERRY FLIGHT FOR REPAIRS, ALTERATIONS, MAINTENANCE OR STORAGE														
		2	EVACUATE FROM AREA OF IMPENDING DANGER														
		3	OPERATION IN EXCESS OF MAXIMUM CERTIFICATED TAKE-OFF WEIGHT														
		4	DELIVERING OR EXPORT		5	PRODUCTION FLIGHT TESTING											
		6	CUSTOMER DEMONSTRATION FLIGHTS														
		C	6	MULTIPLE AIRWORTHINESS CERTIFICATE (Check ABOVE "Restricted Operation" and "Standard" or "Limited" as applicable.)													

III. OWNER'S CERTIFICATION	A. REGISTERED OWNER (As shown on certificate of aircraft registration)										IF DEALER, CHECK HERE <input checked="" type="checkbox"/>						
	NAME <b>THE NEW PIPER AIRCRAFT, INC.</b>					ADDRESS <b>2926 PIPER DRIVE, VERO BEACH, FL 32960</b>											
	B. AIRCRAFT CERTIFICATION BASIS (Check applicable blocks and complete items as indicated)																
	<input checked="" type="checkbox"/>	AIRCRAFT SPECIFICATION OR TYPE CERTIFICATE DATA SHEET (Give No. and Revision No.) <b>A7SO REV 13</b>					<input checked="" type="checkbox"/>	AIRWORTHINESS DIRECTIVES (Check if all applicable AD's complied with and give latest AD no.) <b>2000-14</b>									
	AIRCRAFT LISTING (Give page number(s)) <b>N/A</b>					SUPPLEMENTAL TYPE CERTIFICATE (List number of each STC incorporated) <b>N/A</b>											
C. AIRCRAFT OPERATION AND MAINTENANCE RECORDS																	
<input checked="" type="checkbox"/>	CHECK IF RECORDS IN COMPLIANCE WITH <del>XXXXXX</del> FAR 91.417					TOTAL AIRFRAME HOURS <b>9.6</b>					EXPERIMENTAL ONLY (Enter hours flown since last certificate issued or renewed) <b>N/A</b>						
D. CERTIFICATION - I hereby certify that I am the registered owner (or his agent) of the aircraft described above, that the aircraft is registered with the Federal Aviation Administration in accordance with Section 501 of the Federal Aviation Act of 1958, and applicable Federal Aviation Regulations, and that the aircraft has been inspected and is airworthy and eligible for the airworthiness certificate requested.																	
DATE OF APPLICATION <b>AUG 03 2000</b>					NAME AND TITLE (Print or type) <b>JOHN S. HAMBLETON</b>					AGENT SIGNATURE <i>John S. Hambleton</i>							

IV. INSPECTION AGENCY VERIFICATION	A. THE AIRCRAFT DESCRIBED ABOVE HAS BEEN INSPECTED AND FOUND AIRWORTHY BY (Complete this section only if FAR 21.183(d) applies).																	
	2	FAR PART 121 or 127 CERTIFICATE HOLDER (Give Certificate No.)					3	CERTIFICATED MECHANIC (Give Certificate No.)					6	CERTIFICATED REPAIR STATION (Give Certificate No.)				
	2	AIRCRAFT MANUFACTURER (Give name or firm)																
DATE					TITLE					SIGNATURE								

V. FAA REPRESENTATIVE CERTIFICATION	(Check ALL applicable blocks in items A and B)																							
	A. I find that the aircraft described in Section I or VII meets requirements for										<input checked="" type="checkbox"/>	THE CERTIFICATE REQUESTED												
											<input type="checkbox"/>	AMENDMENT OR MODIFICATION OF CURRENT AIRWORTHINESS CERTIFICATE												
	B. Inspection for a special flight permit under Section VII was conducted by										FAA INSPECTOR					FAR DESIGNEE								
DATE <b>AUG 03 2000</b>										DISTRICT OFFICE <b>CE44</b>					DESIGNEE'S SIGNATURE AND NO. <b>RICHARD L. MURDOCK</b> <i>[Signature]</i> <b>DOA SO-1</b>					FAA INSPECTOR'S SIGNATURE				

VI. PRODUCTION FLIGHT TESTING	A. MANUFACTURER	
	NAME	ADDRESS
	B. PRODUCTION BASIS (Check applicable item)	
	PRODUCTION CERTIFICATE (Give production certificate number)	
	TYPE CERTIFICATE ONLY	
APPROVED PRODUCTION INSPECTION SYSTEM		
C. GIVE QUANTITY OF CERTIFICATES REQUIRED FOR OPERATING NEEDS →		
DATE OF APPLICATION	NAME AND TITLE (Print or type)	SIGNATURE

VII. SPECIAL FLIGHT PERMIT PURPOSES OTHER THAN PRODUCTION FLIGHT TEST	A. DESCRIPTION OF AIRCRAFT		
	REGISTERED OWNER	ADDRESS	
	BUILDER (Make)	MODEL	
	SERIAL NUMBER	REGISTRATION MARK	
	B. DESCRIPTION OF FLIGHT		
	CUSTOMER DEMONSTRATION FLIGHTS <input type="checkbox"/> (Check if applicable)		
	FROM	TO	
	VIA	DEPARTURE DATE	DURATION
	C. CREW REQUIRED TO OPERATE THE AIRCRAFT AND ITS EQUIPMENT		
	PILOT	CO-PILOT	NAVIGATOR
D. THE AIRCRAFT DOES NOT MEET THE APPLICABLE AIRWORTHINESS REQUIREMENTS AS FOLLOWS			
E. THE FOLLOWING RESTRICTIONS ARE CONSIDERED NECESSARY FOR SAFE OPERATION (Use attachment if necessary)			

F. CERTIFICATION - I hereby certify that I am the registered owner (or his agent) of the aircraft described above, that the aircraft is registered with the Federal Aviation Administration in accordance with Section 501 of the Federal Aviation Act of 1958, and applicable Federal Aviation Regulations; and that the aircraft has been inspected and is airworthy for the flight described.		
DATE	NAME AND TITLE (Print or type)	SIGNATURE

VIII. AIRWORTHINESS DOCUMENTATION (FAA use only)	<input checked="" type="checkbox"/> A. Operating Limitations and Markings in Compliance with FAR 91.9 <del>91.31</del> as Applicable	G. Statement of Conformity, FAA Form 8130-9 (Attach when required)
	<input type="checkbox"/> B. Current Operating Limitations Attached	H. Foreign Airworthiness Certification for Import Aircraft (Attach when required)
	<input type="checkbox"/> C. Data, Drawings, Photographs, etc. (Attach when required)	I. Previous Airworthiness Certificate Issued in Accordance with FAR _____ CAR _____ (Original Attached)
	<input checked="" type="checkbox"/> D. Current Weight and Balance Information Available in Aircraft	J. Current Airworthiness Certificate Issued in Accordance with FAR 21.183 (a) per 21.273 (Copy attached)
	<input type="checkbox"/> E. Major Repair and Alteration, FAA Form 337 (Attach when required)	
	<input checked="" type="checkbox"/> F. This inspection Recorded in Aircraft Records	

UNITED STATES OF AMERICA

DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

**STANDARD AIRWORTHINESS CERTIFICATE**

1. NATIONALITY AND REGISTRATION MARKS  N687AV	2. MANUFACTURER AND MODEL  PIPER PA-34-220T	3. AIRCRAFT SERIAL NUMBER  3449180	4. CATEGORY  NORMAL
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5. AUTHORITY AND BASIS FOR ISSUANCE

This airworthiness certificate is issued pursuant to the Federal Aviation Act of 1958 and certifies that, as of the date of issuance, the aircraft to which issued has been inspected and found to conform to the type certificate therefor, to be in condition for safe operation, and has been shown to meet the requirements of the applicable comprehensive and detailed airworthiness code as provided by Annex 8 to the Convention on International Civil Aviation, except as noted herein.

Exceptions:

NONE

6. TERMS AND CONDITIONS

Unless sooner surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator, this airworthiness certificate is effective as long as the maintenance, preventative maintenance, and alterations are performed in accordance with Parts 21, 43, and 91 of the Federal Aviation Regulations, as appropriate, and the aircraft is registered in the United States.

DATE OF ISSUANCE  AUG 03 2000	FAA REPRESENTATIVE  RICHARD L. MURDOCK	DESIGNATION NUMBER  DOA SO-1
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Any alteration, reproduction, or misuse of this certificate may be punishable by a fine not exceeding \$1,000, or imprisonment not exceeding 3 years, or both. THIS CERTIFICATE MUST BE DISPLAYED IN THE AIRCRAFT IN ACCORDANCE WITH APPLICABLE FEDERAL AVIATION REGULATIONS.

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