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US Department
of Transportation
Federal Aviation

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

A STATE OF THE PARTY OF THE PAR	Electronic Tracking Number							
Exp: 04/30/2023								
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)) Nationality and Registration Mark Serial No. N33560 28-7525207 1. Aircraft Make Model Series Piper PA-28-140 Name (As shown on registration certificate) Address (As shown on registration certificate) Address 647 E CHICAGO RD 2. Owner COLDWATER City State MI AIRCRAFT & AVIATION PROFESSIONAL LLC 490369497 Zip Country USA 3. For FAA Use Only 4. Type 5. Unit Identification Repair Alteration Unit Make Model Serial No. (As described in Item 1 above) AIRFRAME V **POWERPLANT** 0-320-E3D Lycoming L-40812-27A PROPELLER Type **APPLIANCE** Manufacturer 6. Conformity Statement A. Agency's Name and Address B. Kind of Agency Rueben A Walkup U. S. Certificated Mechanic Manufacturer Address 300 Airport Rd Coldwater Foreign Certificated Mechanic C. Certificate No. Coldwater City State MI Certificated Repair Station AP 3368961 49036 country United States Certificated Maintenance Organization 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 Signature/Date of Authorized Individual per 14 CFR Part 43 Rueben A Walkup 04/12/2024 App. B 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 FAA Fit. Standards Persons Approved by Canadian Manufacturer Maintenance Organization Inspector Department of Transport BY Other (Specify) Inspection Authorization **FAA** Designee Repair Station Certificate or Designation No. Signature/Date of Authorized Individual AP 3368961 Rueben A Walkup 04/12/2024

		N33560		04/12	2/2024	
		Nationality ar	d Registration	Mark	Date	
s engine was modifie otember 26th, 2005 to				rawing R14	001D rev h	H, date
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- United States Of America

Bepartment of Eransportation - Nederal Abiation Administration

# Supplemental Type Certificate

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7505 Karl May Drive		
Waco, TX 76708		1
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certifies that the change in the type design for the follow	ving product with the limitations and conditi	ina.
therefor as specified hereon meets the airworthiness regul	imments of Prot die lik V. O A. OD D	ו ריז נייני
/ / /- /	Santa of Sure of the Sure Sour Sbegula	elegnis.
Griginal Product Type Certificate Number: 2A1:		A 1
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Mondal: PA-2	28-140	1 1
1 37	- III \	7 5 /
*******		1-1
Description of Type Design Change: Installation of 160	H. P. Lycoming O-320-D2A, D2B, D2C, D3G-	-F2A -or
-E3D engines on a Piper Model PA-28-140 in-accordance wi	th RAM Aircraft Drawing No. R14001D Revieto	n LI
dated September 26, 2005, or later FAA approved revision.	FAA approved Airplane Flight Manual Supplement	nt No.
1084, Revision B, dated November 14, 2006, or later FAA a	poroved revision is required.	in iyo.
1, 2000, 01 11114	pproved revision is required.	A - 1
Limitations and Conditions. To be eligible for installation	Turamiha @ 220/ E2/4 1/0 220 Fab	and Same
madified per CTC CE9097CW Inthestine Co. C.	on, Lyconing 0-520-E2A and 0-320-E3D engine	must be
medified per STC SE8987SW. Instructions for Continued A	irworthiness are contained in RAM Drawing num	ber 2662
dated December 12, 2005. The installer must determine whe	ther this design change is compatible with previou	rsly
approved modifications. If the holder agrees to permit anoth	er person to use this certificate to alter a product, t	he holder
must give the other person written evidence of that permission	n.	المساسي
12101		
This certificate and the supporting data which is the bas	sis for approval Shall remain in offect until	
Surrendered, suspended, revoked or a termination date is	otherwise established by the Anderinistenting	All.
Federal Assistion Administration.	i i i i i i i i i i i i i i i i i i i	1
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Date of application : January 03, 1978	Date reissued: October 8, 2001; February 12, 2	800
2 32 121		
Dale of isseance January 20, 1978	Date amended . 09/28/81; 10/21/81; 01/17/97; 1	1/14/06
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	By direction of the Solministrator	~~ /~~ \
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	Signature)	1111
	S. Frances Cox, Manager	
Town Town	Special Certification Office,	
TOMMISTRATION .	Southwest Region	
11121 - 1121		
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Any alteration of this certificate is puntshable by a fine of mot exc		
are a construction of the contract of the cont	ceeding \$1,000, or imprisonment not exceeding 3 years	r hath



### OVERHAUL MANUAL SUPPLEMENT FOR LYCOMING O-320-E3D AS MODIFIED PER STC SE 8987 SW

The engine overhaul procedures for the Lycoming O-320-E3D engine as modified per STC SE SW are identical to the original Lycoming O-320-E3D and Lycoming O-320-D3G. These procedures may be found in the Avco Lycoming Overhaul Manual for Direct Drive engines, Part No. 60294-7.

## SECTION 11 OPERATING TEST LIMITS LYCOMING O-320-E3D AS MODIFIED PER STC SE 8787 SW

Run-In Schedule	1 Hr. 20 Min.
Maximum Rated RPM and Tolerance	2700-2725 RPM
Oil Consumption at Max. Rated Power	1.2 Lbs./Hr. ABTI
Oil Grade to be Used	SAE 50
Fuel Grade to be Used	HIS DOCUMENT CO DWINED BY RAM AIR JUNAUTHORIZED DIS JUNCLOSURE OR US HIS DOCUMENT TO S AUTHORIZED ONL JUTHORIZED ONL JUTHORIZE
Idling RPM and Tolerance	1.2 Lbs./Hr.  SAE 50  100, 100LL  SAE 50  RPM Max.
Magneto Spread to 2100 RPM	50 RPM Max.
Oil Temperature - Maximum	245 °F  245 °F
Oil Temperature - Desired Range	THIS DOCUMENT CONTAINS TRADE SECHET INFORM DWINED BY RAM AIRCRAFT, LIMITED PARTINERSHIP JUNAUTHORIZED DISCLOSURE OF THE INFORMATION ONTAINED IN THIS DOCUMENT TO GROUPS OR IND SAUTHORIZED ONLY BY MEANS OF A LETTER OF AUTHORIZED ONLY BY MEANS OF A LETTER OF AUTHORIZED OF AUTHORIZ
Oil Pressure at Max. Rated Power (Engine Oil Temperature 175 °F - 185 °F)	THIS DOCUMENT CONTAINS TRADE SECHET INFORMATION OWNED BY RAM AIRCRAFT, LIMITED PARTINERSHIP UNAUTHORIZED DISCLOSURE OF THE INFORMATION CONTAINED IN THIS DOCUMENT TO GROUPS OR INDIVIDUALS SAUTHORIZED ONLY BY MEANS OF A LETTER OF A LETT
Oil Pressure at Idle (Engine Oil Temperature 140 °F - 150 °F)	25 PSI Minimum
Timing of Engine and Tolerance	Left 25° BTC ± 1° Right 25° BTC ± 1°
Cylinder Head Temperature (Bayonet Thermocouple)	500 °F Max.
Normal Rated Power (Power Correction for Intake Air Temp.)	160 HP at 2700 RPM 1% per 10 °F Variance from Standard
Fuel Consumption (Sea Level Standard Day at 160 HP and 2700 RPM)	82 pph
Fuel Pressure at 2700 RPM	2-5 PSI

DWG. NO. 1669

Page 1 of 1

02-04-94

Hepartment of Transportation - Federal Abiation Administration

## Summontal Anna Wartificate

Subhiguentar	withe certificate
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Numbe	SE8987SW-D
J-vennee	SE8987SW-D
This Carlificate issued to RAM Aircraft, Limited Part	nership
7505 Kárl/May Drive	
Waco, TX 76708/	
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vertifies that the change in the type design for the follo	
therefor as specified hereon meets the airworthiness requ	wirements of Part 13 of the Civil Air Regulations
to the state of the state of the	
Osiginal Product Type Certificate Number: E-2	.74
Make: AV	CO Lycoming Division of Textron, Inc.
, \ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	
Model: 0-3	20-E3D, O-320-E2A
	1,7-1, 7-1
Description of Type Design Change Modify engine O.	-320-E3D in accordance with RAM Aircraft Drawing No.
1724 Rev. C. dated April 17, 2006, or later FAA approved	revision to increase take off power rating from 150HP to
160HP Modify O-320-E2A engine in accordance with RA	M Aircraft Drawing No. 1724, Rev. C, dated April 17,
2006, or later FAA approved revision to increase take off a	nd maximum continuous power rating from 150HP to
160HP,	[, ]
James 1 1 - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	b
Town a North and Assess	20/100FT T
Limitations and Conditions. Minimum fuel grade is 10	00/100LL Lycoming model O -320-E2A not certified with
gravity flow fuel system. The installer must determine who	ther this design change is compatible with previously the police the person to use this certificate to alter a product, the holder
must give the other person written evidence of that permiss	tion
must give the other person written evidence of mat berims	non.
	720 720
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
Tederal Sociation Administration	
Search Sociation Committee Line	(1.55)
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MATERIAL DESCRIPTION OF THE PROPERTY OF THE PR	La Mariante Comment
65 . 6 . 6 35 25 1004	Date reissued: October 08, 2001; February 20, 2008
Date of application: March 25, 1994	Date reaster. October 40, 2001, 1 colany 20, 200
Date of issuance: October 27, 1994	Date amended: June 26, 2006; October 11, 2006
Date of issuance: October 21, 1994	Revision 2
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TRAL ALIA	By direction of the Administrator
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111111111111111111111111111111111111111	la (Signature)
The state of the s	S. Frances Cox, Manager
TOMINISTRATION	Special Certification Office,
	Rotorcraft Directorate
	(Title)
	ot exceeding \$1,000, or imprisonment not exceeding 3 years, or both
Any atteration or this certificate is punishable by a fine of his	A STATE OF THE SECOND S

PAA Form 8110-2(10-68) Page 1 of 12 This certificate may be transferred in accordance with FAR 21.47.



June 13, 2023

ELITE AIR SERVICE DON BROWN 300 AIRPORT RD COLDWATER, MI 49036

### **RE: STC USAGE AGREEMENT**

Dear Sir or Madam:

This letter serves as a one time authorization per our installation center agreement to modify Lycoming Engine Model **O-320-E3D**, Serial No. **L-40812-27A** to increase take-off power rating from 150HP to160HP. This Engine is to be installed on, Aircraft Model **PA-28-140** Serial No. **28-7525207**.

Installation is to be done in accordance with RAM AIRCRAFT LIMITED PARTNERSHIP STC No. <u>SE8987SW-D</u>.

Sincerely

Hope Valentine

Quality Assurance Dept.

## RAM AIRCRAFT SERVICE LETTER

SL2003-01A

SUBJECT: COMPLIANCE WITH FAA AIRWORTHINESS DIRECTIVE (AD) 98-02-08

PURPOSE: Provide clarification as to the applicability of AD 98-02-08 to RAM Aircraft owned

Supplemental Type Certificates (STC) on Textron Lycoming O-320 series, four cylinder

reciprocating engines.

MODELS AFFECTED: Textron Lycoming O-320-E3D and O-320-E2A engines modified by STC

SE8987SW and O-320-E2D engines modified by STC SE3692SW.

#### BACKGROUND

RAM Aircraft originally issued Service Letter SL2003-01 on April 11, 2003 to installers of modified Lycoming O-320-E3D and O-320-E2D engines per RAM STC SE8987SW and SE3692SW. The service letter required that RAM modified engines comply with FAA Airworthiness Directive (AD) 98-02-08. STC SE8987SW and SE3692SW increase the takeoff power rating of the Textron Lycoming O-320-E3D and O-320-E2D engines from 150 hp to 160 hp. Recently, RAM revised STC SE8987SW to add Lycoming O-320-E2A engine to increase takeoff and maximum continuous power rating from 150 hp to 160 hp.

The revision A of this Service Letter instructs the installer that compliance with FAA AD 98-02-08 is mandatory for all RAM-modified Lycoming engine models listed above. The O-320-E2D engine modified by STC SE3692SW is installed on, but not limited to, Cessna model 172 aircraft. The O-320-E2A and O-320-E3D engines modified by STC SE8987SW are installed on, but not limited to, Piper model PA-28-140 and PA-28-151 aircraft.

Textron Lycoming and the FAA issued AD 98-02-08 (attached) on Jan. 28, 1998 that applies to Lycoming 320 series engines limited to 160 HP, and 360 series, four cylinder reciprocating engines with fixed pitch propellers. The action required by the AD is intended to prevent crankshaft failure, which can result in engine failure, propeller separation, forced landing, and possible damage to the aircraft. Note 1 of AD 98-02-08 states, "This airworthiness directive (AD) applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD." RAM-modified engines per above STCs are rated at 160 HP and have the same basic crankshaft as the standard 160 HP 320 series engines, and thus compliance with AD 98-02-08 is mandatory.

	ISSUED	)	d	REVISEI	0	RAM Aircraft, Limited Partnership	PAGE	REVISION
МО	DAY	YEAR	МО	DAY	YEAR	Waco Regional Airport 7505 Karl May Dr, Waco, Texas 76708	1 of 2	
04	11	2003	05	23	2007	Phone: (254) 752-8381 Fax: (254) 752-3307 Website: http://www.ramaircraft.com	SL2003-01	A

#### **GUIDANCE**

Textron Lycoming O-320-E2D engines modified by STC SE3692SW, and O-320-E2A and O-320-E3D engines modified by STC SE8987SW must comply with the requirements of AD 98-02-08 (attached).

Perform crankshaft inspections per Textron Lycoming Service Bulletin No. 505B, dated Dec. 1, 1997, within the compliance times specified by AD 98-02-08. Compliance with all portions of AD 98-02-08 is required.

As specified in AD 98-02-08, paragraph (f), if the crankshaft ID has been painted with Urethabond 104 and confirmed with the letters "PID" stamped on the propeller flange OD per Textron Lycoming Service Bulletin No. 530A, dated Jun. 29, 1998, then the inspection actions required by AD 98-02-08 are no longer necessary. However, it is necessary to complete the survey shown in Appendix 1 of AD 98-02-08.

Textron Lycoming Service Bulletins are available on the Textron Lycoming website: <a href="http://www.lycoming.textron.com">http://www.lycoming.textron.com</a> or may be obtained by contacting RAM Aircraft.

### CONTACT

RAM Aircraft Customer Service Dept. at (254) 752-8381 (M-F, 8 AM to 5 PM, CDT).

	ISSUED	9	1	REVISEI	)	RAM Aircraft, Limited Partnership	PAGE	REVISION
MO	DAY	YEAR	MO	DAY	YEAR	Waco Regional Airport 7505 Karl May Dr, Waco, Texas 76708	2 of 2	
04	11	2003	05	23	2007	Phone: (254) 752-8381 Fax: (254) 752-3307 Website: http://www.ramaircraft.com	SL2003-01	A



June 13, 2023

ELITE AIR SERVICE DON BROWN 300 AIRPORT RD COLDWATER, MI 49036

**RE: STC USAGE AGREEMENT** 

Dear Sir or Madam:

This letter serves as a one-time authorization per our agreement to install a Lycoming Engine Model O-320-E3D OR O-320-E2A (Modified by STC SE8987-SW-D), D2A, D2B, D2C, OR D3G on Piper Aircraft Model 140 Serial No.28-7525207.

Modification is to be done in accordance with RAM AIRCRAFT LIMITED PARTNERSHIP STC SA2706SW-D.

Sincerely,

Hope Valentine

Quality Assurance Dept.

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

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

Electronic Tracking Number

Federal Avia Administrati	ition	(2)		uo, 1 o	o.p.a.	., .				For FAA Use Only
and dis	JCTIONS: Pri position of this h such violation	form. This	repo	ort is required	by law (49	U.S.0	Appendix B, and a C. 1421). Fallure	AC 43.9-1 (or subset to report can result i	quent revision to in a civil penalty	nereof) for instructions not to exceed \$1,000
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1. Aircraft	Make PIPE							Model PA-28-140		Series PA-28-140
2. Owner		(As shown SON, JOI		egistration cen	tificate)			Address (As shown Address 5090 KA City FORSYTH	State GA	
						3	B. For FAA Use	Zip_30040 Only	Co	untry USA
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4.	. Type						5.	Unit Identification		
Repair	Alteration		Un	nit		٨	Make	Mod	el	Serial Number
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have	tify that the rep e been made it ished herein is	n accordan	ce wit	th the requirer	nents of P	art 43	of the U.S. Fede	ve and described on ral Aviation Regulati	the reverse or ons and that the	attachments hereto
Extended r per 14 CFF App. B				Signature/I THOMA			ed Individual DECEMBI	ER 04, 2007	-/	toeld
						-	proval for Retur			
	t to the author trator of the Fe						ntified in item 5 w	as inspected in the n	nanner prescrib	ed by the
DV	FAA Fit Sta	andards		Manufacture	er		Maintenance O	rganization		Person Approved by Canadian Department of Transport
BY	FAA Desig	nee		Repair Station	on	X	Inspection Auth	orization	Other (S	Specify)
Certificate Designatio	n No.		-500	onature/Date of		ed Indi	vidual	Too	14	

		N33560		DECEMBER 04, 2007
		Nationality and Registration	Mark	Date
PLACED WING SKIN - LH LE	ADING EDGE OUTBOA	RD, PIPER PART NUMBER 620	82-00.	
WORK PERFORMED IN AC	CORDANCE WITH PIPE	ER SERVICE MANUAL, SECTIO		H 4 AND AC 43.13-1B/2A
CTION 4, PARAGRAPHS 4-5	0 THRU 4-58.	END		

## U.S. Departm

U.S. 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

Federal Av Administr										
instructi	ions and	disposition of this	Il entries. See FAR 43 s form. This report is r lation (Section 901 Fed	required	d by	3 Appendix B, and AC 4 y law (49 U.S.C. 1421). ion Act of 1958).	13.9-1 (or subsequent failure to report	uent revi can resu	ision thereof ult in a civil p	) for enalty not to
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		Serial No. 28-7525207				Nationalit N33560	ty and Registration M	ark		
2. Ow	vner	Name (As shown Wilson, John	n on registration certificate)	)		5090 Ka Cummin	(As shown on registra arr Rd. ng, Georgia 30040- co. USA		icate)	
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U	Init	М	lake			Model	Serial No.		Repair	Alteration
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POWER	RPLANT									
PROPEL	LLER									
APPLIAN	NCE	Type Manufacturer								
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A. Age	ncy's Nar	me and Address	â			B. Kind of Agency		C. Ce	ertificate No.	
	. Z. Reiner				Х	U.S. Certificated Mechanic		149426349		
0.0000000000000000000000000000000000000	trick Mill R GA 3068	Control of the Contro				Foreign Certificated Mecha	nic			
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here	eto have l	been made in ac	alteration made to the cordance with the req is true and correct to the	uiremer	nts	Manufacturer entified in item 4 above of Part 43 of the U.S. Formy knowledge.	and described on ederal Aviation R	the reve	erse or attack	hments he
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			ven persons specified deral Aviation Adminis			unit identified in item 4	was inspected in REJECTE		nner prescri	bed by
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	otion of Wor space is requ			heets. Identify (	with aircraft nationalit	ity and regis	tration mark and da	ate work completed.)
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					NG FOLLOWS ****		******	
1.6								
				Additional S	Sheets Are Attatched			

#### United States of America

### Department of Transportation—Federal Aviation Administration

## Supplemental Type Certificate

Number SA880WE

This certificate, issued to

Met-Co-Aire 14656 1/2 Firestone Boulevard La Mirada, CA 90638

cortifies 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

\*Refer to T.C. Data Sheet 2A13 for a complete statement of the certification basis.

Original Product - Type Certificate Number 2A13

Make: Piper

Model PA28 -140, -150, -160, -180, -28R-180, 28R-200

Description of Type Design Change: Installation of a new design fiberglass wing tip in accordance with Met-Co-Aire FAA sealed Installation Instruction No. SD 1023, dated December 31, 1964; Revision of October 25, 1982.

Manufacture of the tips is controlled by Met-Co-Aire Drawing No. 11051, dated December 31, 1964 or later FAA approved revision.

Limitations and Conditions: This approval should not be extended to other specific aircraft of this model on which other previously approved modifications are incorporated unless it is determined by the installer that the interrelationship between this change and any of those other previously approved modifications will introduce no adverse effect upon the airworthiness of that aircraft.

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

Late of application December 30, 1964

Sale result September 20, 1995

Late of issuance: March 1, 1965

Tale unwaded: January 4, 1983

By direction of the Administrator

Milanda Minspe

Manager, Technical and Administrative Support Staff, ANM-103L

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



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, 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 each s	1	tion 901 Federal Aviat	tion Act	of 1	958).						
1. Aircraft	Make P.P.	EV				Model	PA-28-	140	1		
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	Name (As shor	wn on registration cer ST W, UA	rtificate)			Address (As shown on registration certificate)					
2. Owner	30000	-1 -07 1	,			FA	RMINGH	on. M	636	40-7143	
				3. F	For FAA Use O	nly				1- 1-13	
				4. L	Jnit Identificati	on			5. Type		
Unit	*	Make			Model Serial No			0,	Repair	Alteration	
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POWERPLAN	T										
PROPELLER							•				
APPLIANCE	Manufacturer										
			6.	Co	nformity Staten	nent					
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3466	o DEN MA	IN 150				oreign Certificated Mechanic					
FAIR	21 No tool	MU 6364	40 -					21	4884	()	
D. I certify	that the repair and	/or alteration made to dance with the require nd correct to the best	the unit	of Pa	art 43 of the U.S	n 4 above a 6. Federal <i>A</i>	nd described on t Aviation Regulati	he reverse ons and th	or attachme at the inform	nts hereto nation	
Date 5-1	1-06			Signature of Authorized Individual							
	- 20		7 400	TOU.	al for Return To	Convine	7				
Pursuant t	o the authority given	ven persons specified Aviation Administration	below.	the		in item 4	was inspected in	n the man	ner prescrib	ed by the	
FA	AA Fit. Standards spector	Manufacturer			ection Authoriza		Other (Specify)				
50.00	AA Designee	Repair Station	F	Perso Cana	on Approved by ada Airworthines	Transport s Group	HTM COLUMN				
Date of Appro	oval or Rejection	Certificate or Designation No.	. 1	Sign	ature of Author	rized Indivi	dual/	/			
J /	0.00	01700	11	$\propto$	eles	10)	en				

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.

(If more sna	n of Work Accomplished ace is required, attach additional sheets. Ic	dentify with aircraft nationa	ality and registration	on mark and date work completed	d.)
1. 7	NSTAILED AV-CON	1 INTERCU	m mo	dez ACGPA	
1.1	N PANEZ WITH	Four DUTLE	Is Per	AV-com	
	INSTALLATION M	LANUAL A	ND W	I RING INSTRU	Tide
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2	AN PORT OF PROPERTY.	ENE	>		
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☐ Additional Sheets Are Attached

#### U.S 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, 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 piper	14-		Model PA 28-140	- Mills				
. Aircraft	Serial No. 28-7525207	W III SAII	Harry -	Nationality and N33560	Registration Mark		Yes		
. Owner	Name (As shown on reg. Jokerst William A	istration certificate)		Address (As shown on registration certificate) 2660 Wycliff Dr. Farmington Mo. 63640-7143					
			3. For FAA Us	e Only					
*	and is app by a perso ACE STI	roved for the abov on authorized in F -FSDO	mplies with the appl e described aircraft AR Part 43, Sectio	n 43.7."	mity inspection	na			
	District (	Office	Date		mspector		5. Type		
			4. Unit Identii	Ication	1000 A- 7000		Repair	VVC-200-200-20	
Unit	Make		Model	Model Serial No.				Alteration	
AIRFRAME	ME ————————————————————————————————————							Х	
POWERPLANT				K New Yorks (Feb.)					
PROPELLER									
APPLIANCE	Type  Manufacturer								
			6. Conformity	Statement					
			B. Kind of Agenc		lc.	Certificate No.			
A. Agency's Na Larry McCor 3466 Denma Farmington 63640	an Rd.		<ul><li>☑ U.S. Certific</li><li>☐ Foreign Cert</li></ul>	ated Mechanic tificated Mechanic Repair Station		148841			
D. I certify the	nat the repair and/or alteration made in accordance with true and correct to the best	the requirements of	s) identified in item 4 a Part 43 of the U.S. Fe	bove and described ederal Aviation Regu	on the reverse or lations and that the	attachments he ne information f	ereto umished		
Date	riel 10, 200		Sa	f Authorized Individu	lul				
(			7. Approval for R						
Pursuant to to Administrator	he authority given persons r of the Federal Aviation Ad	specified below, the iministration and is	unit identified in item 4  APPROVED	was inspected in the REJECTED	e manner prescri	bed by the			
1.2	AA Fit Standards	Manufacturer	^	Authorization		er (Specify)			
F	AA Designee	Repair Station	Canada Air	proved by Transport worthiness Group		0.07			
Date of Approv	0, 2016 Des 214	ifficate or ignation No. 18841		of Authorized Individ					

. Description of Work Accomplished	
(If more space is required, attach additional sheets. Identify with aircraft nationality a	nd registration mark and date work completed.)
Installed APOLLO 2001 GPS PN# 430-0267-700 at station 64 and antenna at station	100 per Apollo installation Manual#560-0161-01A
Installed placard in view of pilot reading GPS VFR USE ONLY.	
Antenna installed per AC43.13-2A chapter 2&3.	
All work performed in accordance with AC43.13.1B Chapters,11,12,&17.	
Required ground checks have been performed.	
Weight and balance and equipment have been updated.	
Electrical load does not exceed 80% of capacity.	
Supplemented aircraft P.O.H. with apollo GPS operating instructions.	The state of the s
A functional flight test will be performed in accordance with FAR 91.407B to insure synditions of ACc20-138. The ressults of that flight test will be entered in the aircraft Image.	stem accuracy and operataion satasfies the aintence records as required by FAR 91.407B.
D. For continued airworthiness maintence refer to manafucturers installation manual and	
1 GPS will be inspected on condition as needed per normal maintence interivals per Ap	
END	
1	
Larry McCormick IA 2148841	
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	The same of the same of the same of
Additional Shoets 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, 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).

and disposition for each su	tion of this form. T ch violation (Sect	This report is required ion 901 Federal Avia	d by law ( tion Act	49 U of 19	.S.C. 1421). Fa 958).	ilure to re	port can result in a	civil pena	Ity not to exce	eed \$1,000	
	Make P	PER	11 11		20/1-1	Model	PA 28-1				
1. Aircraft	Carial No.	8-7525	520	7	000	Nationality and Registration Mark N 3356					
2. Owner	Name (As show	vn on registration ce ST WILLI	rtificate) Am	٠ (	JEHIVA	2	(As shown on regi 660 WY FARZ MIN	CLI	CTE .	(36/1	
	4			3 F	or FAA Use O		WIE I'LL	7100 1	1.00	0 3040	
		AS 1 - 1			37.16.			2.5		1	
				4. U	Init Identificati	on			5. Type	84	
Unit	N 7 313	Make		1	Model		Serial No	937	Repair	Alteration	
AIRFRAME	RFRAME (As described in Item 1 above)						×				
POWERPLANT	Alleria la r		li lin		4.84		11: 11:11		+ 1		
PROPELLER	1 E 3		7 (#E)	51		15.3 X   20					
APPLIANCE	Type Manufacturer	ALTER SEA			D. A.	d- la					
			6	Co	nformity State	ment					
A Agency's	Name and Addres	s	0.		Kind of Agenc			C. Certi	ificate No.		
	y mc Cor			Y	U.S. Certificate						
	DENMA		chre	Foreign Certificated Mechanic				0.	0		
M	1		3:		Certificated Re	pair Station	p	21	Y 884		
FARM	IN gton, v	16 63640	)		Manufacturer				10011		
D. I certify have be	that the repair and en made in accor	d/or alteration made t dance with the requi nd correct to the bes	to the uni rements	of Pa	art 43 of the U.						
Date 4- 1.	5-99			Sign	Lary		ividual Lornin	e			
			7. App	prova	al for Retyrn T	o Service					
Pursuant to Administra	o the authority gi tor of the Federal	ven persons specific Aviation Administrat	ed below tion and i	, the	unit identifie	d in item	4 was inspected in REJECTED	n the mar	nner prescrib	ed by the	
Ins	A FIt. Standards spector	Manufacturer	X	Insp	ection Authoriz	ation	Other (Specify)				
BY FA	A Designee	Repair Station		Can	on Approved b ada Airworthine	ess Group				_/=	
Date of Appro	oval or Rejection	Certificate or Designation No.	241	Sign	Laure of Author	mized Indi	(Van )			1	

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.)

REPLACED the # 1 ALUMINUM CABIE ASSEMBLIES,
The BATTERY TO GROUND, BATTERY TO MASTER
SOLENOUD, MASTER SOLENOLD TO STARTER SOLENOLD,
STARTER SOLE NOLD TO STARTER & ENGINE TO
ALIZERAME RETURN G MOUND AS REQUIRED
BY PIPER SB 836A. THESE CABLES WERE
REPLACED WITH #1 QUAGE COPPER CABLE
ASSEMBLIES WHICH WERE MANUFACTURED
BY BOGART AVIATION FOR THIS AIRCRAFT
IN ACCORDANCE WITH STC SASSSINM
DRAWING # 2-6 & REVISION A.

EN P

LARRY Mc Cormick

FA 2148841

### United States of America

Department of Transportation—Federal Aviation Administration

## Supplemental Type Certificate

Number SA3531NM

Bogert Aviation 308 S. Perry Place Kennewick, WA 99336

(509) 736-1513 ofc

This certificate, issued to Bogert Aviation

(509) 735-2106 fax cortifies that the change in the type design for the following product with the limitations and conditions

therefor as specified hereon meets the sirunthiness requirements of Part \*

Regulations.

Criginal Product - Trype Certificater Number: \*

\*See attached FAA Approved Model List (AML) No. SA3531NM for list of approved

Make: \* airplane models and applicable

Medel: \* airworthiness regulations.

Description of Type Design Change: Installation of copper electrical cables in accordance with Bogert Aviation Installation Instructions as listed on AML No. SA3531NM, or later

Limitations and Conditions: Approval of this change in type design applies to the above model aircraft only. This approval should not be extended to aircraft of this model on which other previously approved modifications are incorporated unless it is determined that the relationship between this change and any of those other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of that aircraft. A copy of this Certificate and FAA Approved Model List (AML) No. SA3531NM amended April 10, 1989, or later FAA approved revision, must be maintained as part of the permanent records for the modified aircraft. This certificate and the supporting data which is the basis for approval shall remain in effect until sur-

rendered, suspended, revoked, or a termination date is etherwise established by the Administrator of the

Federal Aviation Administration.

Tale of application: May 27, 1986

Tale of www July 15, 1986

Late wissued:

Tole anunded: April 10, 1989

By direction of the Administrator

Steward L' milli

(Signature) Acting Assistant Manager, Seattle Aircraft Certification Office

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

6
US Department
of Transportation
Federal Aviation
Administration

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

I	Exp: 04/30/2023							
OMB No. 2120-0020 Exp: 04/30/2023 Electronic Tracking Number								

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)) Nationality and Registration Mark Serial No. N33075 28R-7535116 1. Aircraft Make Model Series Piper PA-28R-200 Cherokee Name (As shown on registration certificate) Address (As shown on registration certificate) Address 647 E CHICAGO RD 2. Owner COLDWATER State MI City AIRCRAFT & AVIATION PROFESSIONAL LLC Zio 490369497 Country USA 3. For FAA Use Only 4. Type 5. Unit Identification Repair Alteration Unit Make Model Serial No. (As described in Item 1 above) V AIRFRAME 0-320-E3D 1 POWERPLANT Lycoming L-40812-27A PROPELLER APPLIANCE Manufacturer 6. Conformity Statement A. Agency's Name and Address B. Kind of Agency Rueben A Walkup U. S. Certificated Mechanic Manufacturer Address 300 Airport Rd Coldwater Foreign Certificated Mechanic C. Certificate No. Coldwater State MI Certificated Repair Station City A&P 3368961 49036 country United States Certificated Maintenance Organization 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. Signature/Date of Authorized Individual Extended range fuel per 14 CFR Part 43 Rueben A Walkup 04/12/2024 App. B 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 Persons Approved by Canadian FAA Flt. Standards Manufacturer Maintenance Organization Department of Transport Inspector BY Other (Specify) Inspection Authorization **FAA Designee** Repair Station Certificate or Designation No. Signature/Date of Authorized Individual A&P 3368961 IA Rueben A Walkup 04/12/2024

		N33075		4/12/2	2024	
		Nationality a	nd Registration Ma	rk	Date	
nis aircraft & engine had been previousl nis installation will produce adverse affe stalling 160 HP Lycoming. ICA's indica END	cts for the newly	modified engine	under STC SA	2706SW 8		

### DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

FAA Form 337 (7-67)

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

Form Approved Budget Bureau No. 04-R060.1

FOR FAA USE ONLY

(8320)

OFFICE IDENTIFICATION

CTIONS: Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (or subsequent revision thereo

	MAKE Piper				MODEL PA-28-1	40				
. AIRCRAFT	SERIAL NO.			-	NATIONALITY AND RE	0274	AARK	THE		
	SERIAL 140.	28-7525207			N-33560					
	NAME (As shown	on registration certific	cate)	1-1	ADDRESS (As shown on registration certificate)					
. OWNER	David Ora	aft & Edward	d J.							
	D/B/A Li	ghtning Avia			Poplar Bluf	I, MO. 0	3901			
			3.	FOR FAA USE O	NLY					
		4. UN	IT IDE	NTIFICATION			5.	TYPE		
TINU	,	MAKE		MODEL	SI	ERIAL NO.	REPAIR	ALTER-		
AIRFRAME	*****	**************************	As desc	cribed in item 1 c	bove)	••••		xx		
OWERPLAN	т									
PROPELLER										
	TYPE									
APPLIANCE	MANUFACTURER									
			6. (	ONFORMITY STAT						
A.	AGENCY'S NAME	AND ADDRESS		B. K	IND OF AGENCY	C. C	ERTIFICATE	NO.		
Dale A	. Raymer,	Jr. 0/0		d la	ATED MECHANIC	AP-36	1 52358	37		
Ward A	ircraft Sa	les		I SANDONIA SAND	TIFICATED MECHANIC	3000 600				
P.O.Bo	x 11 Sikes				REPAIR STATION					
		63801		MANUFACTUE				ACMANANA NACA		
attachn	nents hereto have	neen made in accord	ance w	rith the requiren	ntified in item 4 above nents of Part 43 of the 1 best of my knowledge.	J.S. rederal Av	iation Reg	ulations		
DATE	-1-1		tre	SIGNATURE OF	AUTHORIZED INDIVIDU	JAL				
WILE	3/5/	89	1000	Mal	H. ( Bury					
Pursuant t	o the authority giv	ven persons specified	below	VAL FOR RETURN , the unit identi	fied in item 4 was inspec	cted in the mar	ner prescr	ibed by		
the Admin	istrator of the Fede	eral Aviation Admini	stration	and is X AP	PROVED REJECTED	,		-		
2740	AA FLT, STANDARDS	MANUFACTURER	X	INSPECTION AUTHO	DRIZATION	uly)				
BY				CANADIAN DEPAR						

8. DESCRIPTIO craft nat	N OF WORK ACCOMPLISHED (If more ionality and registration mark	space is	required, e work cor	attach add	ditional she	eets. Ident	ify with	air-
1- Airc	raft modified to use knock index per ASTM	autom Spec.	obile g D-439	asoline & STC80	(unlea	ded) 87	min.	
		The En	d					
	6,3801							
MULT TT	Terait dales					VE-30; 283701		
	ACTIVITY HAME AND ADDRESS.							
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	D/B/A Lightning Avi				E PINES	10 E	AD1	
	DEVIG UTELL & Edwar	0 4 100	Broyn	HCO.U				
	Stant, NO. 25-7525207			64000000 2-23				
	MAKE PAPER				V-50-14			
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				ren)				
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#### DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

FAA Form 337 (7-67)

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

Form Approved Budget Bureau No. 04-R060.1

(8320)

FOR FAA USE ONLY

OFFICE IDENTIFICATION

	ons and disposition				MODEL				
AIDCDAFF	Pipe	r			3	PA-28-140			
1. AIRCRAFT	SERIAL NO.	8-7525207				LITY AND REGIST	TRATION M.	ARK	
2. OWNER	David Cra	on registration certificate & Edward htning Avia	J.	J.De Bruyn Rte.# 6 Box 54RR					
	D/D/W TITE	HOHING AVIA		FOR FAA USE O		it Diuli,	110. 0)	301	
		4. UN	IIT IDE	NTIFICATION				5.	TYPE
UNIT		MAKE		MODEL SERIAL				REPAIR	ALTER- ATION
AIRFRAME	*****	••••••	(As des	cribed in item 1 c	above)		**		
POWERPLAN	Lycoming			-320 <b>-</b> E3 <b>A</b>	L-4081 2	L-4081 2-27A		XX	
PROPELLER									
APPLIANCE	TYPE								
	MANUFACTURER								
	ACENICALE PIPE	T AND ADDRESS	6. (	ONFORMITY STAT	IND OF AC	CENCY	C CE	RTIFICATE	NO
100707	AGENCY'S NAMI	The state of the s	-				C. CE	KIIIICAIL	140.
	. Raymer, ircraft Sa			IU.S. CERTIFICATED MECHANIC			A D_ 361		87
	x 11 Sikes			CERTIFICATED	REPAIR STATE	ОИ			
		63801		MANUFACTUI	RER				
attachm	ents hereto have	and/or alteration m been made in accord furnished herein is	ance v	ith the requiren	nents of Par	t 43 of the U.S.	described of Federal Avia	on the rev	verse or ulations
DATE	1=100		BP#	SIGNATURE OF	AUTHORIZ	ED INDIVIDUAL	7		
ು	13/09	THE DOLL VILL	APPRO	VAL FOR RETURN	TO SERVICE	1			
Pursuant to	the authority givestrator of the Federal	ven persons specified eral Aviation Admin	below	, the unit identi	fied in item	4 was inspected REJECTED	in the mann	er prescri	bed by
FA	A FLT. STANDARDS SPECTOR	MANUFACTURER	X	INSPECTION AUTHO	I HILLINY	OTHER (Specify)	b. Ide	abily iwo	9 1/11
BY			_	CANADIAN DEPAR	*****				

1- Mod	ified Engine to use un iknock index per ASTM Th	leaded auto	mobile & STC8	OOGL.	, 87 mi	n.
					Contribute and	
	. Reymer, dr. 0/0 recraft Bales K II Bikeston, Mo.			- Tuecsa i be-at.		
OWENERAL	rhosarting	D-120-19A			#3.5%	X
	energopersusesseesee (4)					
	David Oreit a Laward a	Kta: FG Nox 54ML Foular bluff, Nov 65901				
	21per 20-7525207	MODEL #A-28-140 NATIONALITY AND RECESTIVE MARK #-33560				
	MAJOR REPAIR AND	ALTERATION effect or Applie				