Metho Ottoo of America

Department of Occasiontenion—Federal Aviation Administration

Supplemental Type Certificate

Number SA2167NM

Shis constheate, would to

Precise Flight, Inc.

63120 Powell Butte Rd. Bend, OR 97701 cortifies that the change in the type design for the following product with the limitations and conditions theorefor as specified hoveon meets the aircorthiness impainments of Fart "of the "Rayulations.

Briginal Broduct — Type Certificate Kumbur: Make:

*See attached FAA Approved Model List (AML)

No. SA2167NM for list of approved airplane models and applicable airworthiness regulations

Model.

in accordance with the appropriate Precise Flight, Inc. Engineering Drawing listed on FAA Approved Model List State-option of the Syne Design Change: Installation of Precise Flight, Inc., Scand-By Vacuum System (SVS) No. SA2167NM, dated May 4, 2000, or later FAA approved revision. NOTE: As a precequisite to this change, the engine must be modified in accordance with Precise Flight, Inc. STC No. SE1779NM or SE1780NM, dated April 21, 2000, or later FAA approved revision. Also, modified aircraft must be equipped with a vacuum indicator.

Lineatestons and Bondations: Approval of this change in type design applies to the above model aircraft only, modifications are incorporated unless it is determined by the installer that the relationship between this change adverse effect upon the airworthiness of that aircraft. A copy of this certificate, AML No. SA2167NM and the and any of those other previously approved modifications, including changes in type design, will introduce no appropriate FAA Approved Flight Manual Supplement (AFMS) listed on AML No. SA2167NM must be This approval should not be excended to other aircraft of this model on which other previously approved maintained as part of the permanent records for the modified aircraft. If the holder agrees to permit another person to use this certificate to after the product, the holder shall give the other person written evidence of that permission.

surrendered, susponded, recebed, or a termination dute is atherwise established by the Silministrutor of the This contificate and the supporting data which is the basis for approved shall remain in effect until Sederal Seriation Stehninstration

Tate of agadication: Tate of issuance:

October 31, 1983 November 7, 1983

The to onto smeet. Date amonded

December 15, 1983; December 7, 1984; August 17, 1989; May 4, 2000

a desiglición af the Historians telegion Le La Come Americanos

Acting Manager, Scattle Aircraft Certification Office

Any attendon of this comitate is punishable by a line of real avolesting \$1,000, or imprisorment not excepting \$1,000, or imprisorment not excepting \$3,000, or imprisorment not excepting \$3,000, or imprisorment not excepting \$1.000, or imprisorment not excepting \$1.000, or imprisorment not excepting \$1.000, or imprisorment not except not excepting \$1.000, or imprisorment not excepting \$1.000, or imprisorment not except not ex

Smitt States of America

Department of Cransportation—Jederal Aviation Administration

Supplemental **Eype Certificate**

(Continuation Sheet)

Number SAZIGTWM

(continued) CONDITIONS AND LIMITATIONS:

The conditions and limitations of the original Type Certificates apply except as

requirements of This Continuation Sheet, which is part of STC No. SA2157NM, prescribes the conditions and limitations under which the STC was issued meets the airworthiness requirements of the appropriate regulations.

SUPPLEMENTAL TYPE CERTIFICATE HOLDER: Precise Flight, Inc.

S42167NM Piper Nodel (as listed on AML) as modified by STC No. The Airplane Flight Manual or Pilot's Operating Handbook Supplement must be maintained in the airplane at all times. Equipment:

Current weight and balance report including list of equipment in the certified empty weight must be in the aircraft.

In addition to the Placards and Markings required by TCDS, Note 2, apply the following: ä NOTE

To be located on the push/pull control cable knob:



To be located around the LED bulb for the pump inoperative warning light: <u>a</u>



PAGE SOF IFFAGES

United Sours of Austrice

Supplemental **Eype Certificate** Beparement of Teansportation - Federal Avlation Administration

(Continuation Sheet)

Литвек 522167181

(continued) CONDITIONS AND LIMITATIONS:

Place in front of and in full view of the pilnt: v

FOR OPERATING INSTRUCTIONS AND LIMITATIONS SEE SUPPLEMENT IN OWNER'S MANUAL OR PILOT'S OPERATING HANDBOOK STANDBY VACUUM SYSTEM:

One of the following placards must be placed in full view of the pilot near the instrument vacuum indicator after appropriate entries have been made: ÷

Prose. P. No Men.					
25	Man cont.	Mas conf.	Mar cost.	Man cont.	
1	2002	8	3 3	3	I

1

Allend	ВРМ	my Yeoung
2600		
1000		
2009		
900		
1000		

they ditention of this certificate is parachable by a face of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

c

For

INSTALLATION OF PRECISE FLIGHT STANDBY VACUUM SYSTEM

							Issue Date: December /	, 1304
			Original		FAA Approved Airplane	FAA Approved		
			Type	Certification	Flight Manual		J	AML
	Aircraft	Aircraft	Certificate	Basis for	Supplement*			Amdt.
Item	Make	Model	Number	Alteration		Number	REV	Date
1	Piper Aircraft Corp.	L-14	760	CAR 4a	Supplemental Flight Manual for SA2167NM dated 8/11/99. (SVS III)	SVS III Engineering Drawing 000V0000 And	Rev, dated 3/10/2000	5/4/2000
						Installation Report No. 50050	Rev. 25, dated 8/26/99	
2	Piper Aircraft Corp.		L-14 760 C	Manu Opera dated Supp Manu Opera	Supplemental Flight Manual for Push Operated Cable Valve	SVS V Engineering Drawing 000V0000 And	Rev, dated 3/10/2000	5/4/2000
	·				dated 2/4/2000. (SVS V) OR Supplemental Flight Manual for Pull Operated Cable Valve	Installation Report No. 08072	Rev, dated 12/22/1999	
3	Piper	PA-12, -12S	780	CAR 3	dated 2/4/2000. (SVS V) Supplemental Flight	SVS III Engineering Drawing		5/4/2000
O	Aircraft	PA-14	797	CAR 3	Manual for SA2167NM	000\0000	Rev, dated 3/10/2000	0/4/2000
	Corp.	PA-15	800	CAR 3	dated 8/11/99. (SVS III)	And	1.67., dated of 10,2000	
	1	PA-16, -16S	1A1	CAR 3		Installation Report No. 50050	Rev. 25, dated 8/26/99	
		PA-17	805	CAR 3	1	·		
4	Piper Aircraft	PA-12, -12S	780	CAR 3	Supplemental Flight Manual for Push	SVS V Engineering Drawing 000V0000	Rev, dated 3/10/2000	5/4/2000
	Corp.	PA-14	797	CAR 3	Operated Cable Valve dated 2/4/2000. (SVS V)	And Installation Report No. 08072	Rev, dated 12/22/1999	
		PA-15	800	CAR 3	OR Supplemental Flight Manual for Pull Operated Cable Valve	·		
		PA-16, -16S	1A1	CAR 3				
		PA-17	805	CAR 3	dated 2/4/2000. (SVS V)			

^{*} or later FAA Approved Revision

For

INSTALLATION OF PRECISE FLIGHT STANDBY VACUUM SYSTEM

	1		1	I	1	1	issue Date. December 7	, 1304
lt a a	Aircraft	Aircraft	Original Type Certificate Number	Certificatio n	FAA Approved Airplane Flight Manual Supplement*	FAA Approved		AML Amdt.
Item	Make	Model	Number	Basis for Alteration		Number	REV	Date
5	Piper Aircraft Corp.	PA-18, -18A, -18S, -18-105 (SPECIAL), -18S-105 (SP), -18-125 (ARMY L-21A), -18AS-125, -18S-125, -18-135, -18A-135, -18AS-135, -18-150, -18A-150, -18AS-150, -19 (ARMY L-18C), -19S	1A2	CAR 3	Supplemental Flight Manual for SA2167NM dated 8/11/99. (SVS III)	SVS III Engineering Drawing 000V0000 And Installation Report No. 50050	Rev. , dated 3/10/2000 Rev. 25, dated 8/26/99	5/4/2000
6	Piper Aircraft Corp.	PA-18, -18A, -18S, -18-105 (SPECIAL), -18S-105 (SP), - 18-125 (ARMY L- 21A), -18AS-125, -18S-125, -18-135, -18A-135, -18AS-135, -18AS-150, -18A- 150, -18AS-150, -19 (ARMY L-18C), -19S	1A2	CAR 3	Supplemental Flight Manual for Push Operated Cable Valve dated 2/4/2000. (SVS V) OR Supplemental Flight Manual for Pull Operated Cable Valve dated 2/4/2000. (SVS V)	SVS V Engineering Drawing 000V0000 And Installation Report No. 08072	Rev. , dated 3/10/2000 Rev, dated 12/22/1999	5/4/2000

^{*} or later FAA Approved Revision

For

INSTALLATION OF PRECISE FLIGHT STANDBY VACUUM SYSTEM

							issue Date. December 7	, 1304
Item	Aircraft Make	Aircraft	Original Type Certificate Number	Certification Basis for Alteration	FAA Approved Airplane Flight Manual Supplement*	FAA Approved		AML Amdt.
		Model	Hamboi			Number	REV	Date
7	Piper Aircraft Corp.	PA-20, -20S, -20-115, -20S-115, -20-135	1A4	CAR 3	Supplemental Flight Manual for SA2167NM dated 8/11/99. (SVS III)	SVS III Engineering Drawing 000V0000 And Installation Report No. 50050	Rev, dated 3/10/2000 Rev. 25, dated 8/26/99	5/4/2000
8	Piper Aircraft Corp.	PA-20, -20S, -20-115, -20S-115, -20-135	1A4	CAR 3	Supplemental Flight Manual for Push Operated Cable Valve dated 2/4/2000. (SVS V) OR Supplemental Flight Manual for Pull Operated Cable Valve dated 2/4/2000. (SVS V)	SVS V Engineering Drawing 000V0000 And Installation Report No. 08072	Rev, dated 3/10/2000 Rev, dated 12/22/1999	5/4/2000
9	Piper Aircraft Corp.	PA-22, -22-108, -22-135, -22S-135, -22-150, -22S-150, -22-160, -22S-160	1A6	CAR 3	Supplemental Flight Manual for SA2167NM dated 8/11/99. (SVS III)	SVS III Engineering Drawing 000V0000 And Installation Report No. 50050	Rev, dated 3/10/2000 Rev. 25, dated 8/26/99	5/4/2000
10	Piper Aircraft Corp.	PA-22, -22-108, -22-135, -22S-135, -22-150, -22S-150, -22-160, -22S-160	1A6	CAR 3	Supplemental Flight Manual for Push Operated Cable Valve dated 2/4/2000. (SVS V) OR Supplemental Flight Manual for Pull Operated Cable Valve dated 2/4/2000. (SVS V)	SVS V Engineering Drawing 000V0000 And Installation Report No. 08072	Rev, dated 3/10/2000 Rev, dated 12/22/1999	5/4/2000

^{*} or later FAA Approved Revision

For

INSTALLATION OF PRECISE FLIGHT STANDBY VACUUM SYSTEM

							issue Date: December 7	, 1904
	Aircraft	Aircraft	Original Type Certificate	Certification Basis for	FAA Approved Airplane Flight Manual Supplement*	e FAA Approved Drawing*		AML Amdt.
Item	Make	Model	Number	Alteration		Number	REV	Date
11	Piper Aircraft Corp.	PA-24, -24-250, -24-260, -24-400	1A15	CAR 3	Supplemental Flight Manual for SA2167NM dated 8/11/99. (SVS III)	SVS III Engineering Drawing 000V0000 And Installation Report No. 50050	Rev, dated 3/10/2000 Rev. 25, dated 8/26/99	5/4/2000
12	Piper Aircraft Corp.	PA-24, -24-250, -24-260, -24-400	1A15	CAR 3	Supplemental Flight Manual for Push Operated Cable Valve dated 2/4/2000. (SVS V) OR Supplemental Flight Manual for Pull Operated Cable Valve dated 2/4/2000. (SVS V)	SVS V Engineering Drawing 000V0000 And Installation Report No. 08072	Rev, dated 3/10/2000 Rev, dated 12/22/1999	5/4/2000
13	Piper Aircraft Corp.	PA-25, -25-235, -25-260	2A8	CAR 3	Supplemental Flight Manual for SA2167NM dated 8/11/99. (SVS III)	SVS III Engineering Drawing 000V0000 And Installation Report No. 50050	Rev, dated 3/10/2000 Rev. 25, dated 8/26/99	5/4/2000
14	Piper Aircraft Corp.	PA-25, -25-235, -25-260	2A8	CAR 3	Supplemental Flight Manual for Push Operated Cable Valve dated 2/4/2000. (SVS V) OR Supplemental Flight Manual for Pull Operated Cable Valve dated 2/4/2000. (SVS V)	SVS V Engineering Drawing 000V0000 And Installation Report No. 08072	Rev, dated 3/10/2000 Rev, dated 12/22/1999	5/4/2000

^{*} or later FAA Approved Revision

For

INSTALLATION OF PRECISE FLIGHT STANDBY VACUUM SYSTEM

							issue Date. December 7	, 1304
			Original			FAA Approved	Drawing*	
			Type	Certification	FAA Approved Airplane			AML
	Aircraft	Aircraft	Certificate	Basis for	Flight Manual			Amdt.
Item	Make	Model	Number	Alteration	Supplement*	Number	REV	Date
15	Piper	PA-32-260,	A3SO	CAR 3	Supplemental Flight	SVS III Engineering Drawing		5/4/2000
	Aircraft	-32RT-300,			Manual for SA2167NM	000V0000	Rev, dated 3/10/2000	
	Corp.	-32RT-301T,			dated 8/11/99. (SVS III)	And		
		-32-300,				Installation Report No. 50050	Rev. 25, dated 8/26/99	
		-32RT-300T,						
		-32-301,						
		-32S-300,						
		-32R-301,						
		-32-301T,						
		-32R-300,						
		-32R-301T						
16	Piper	PA-32-260,	A3SO	CAR 3	Supplemental Flight	SVS V Engineering Drawing		5/4/2000
	Aircraft	-32RT-300,			Manual for Push	000V0000	Rev, dated 3/10/2000	
	Corp.	-32RT-301T,			Operated Cable Valve	And		
		-32-300,			dated 2/4/2000. (SVS V)	Installation Report No. 08072	Rev, dated 12/22/1999	
		-32RT-300T,			OR			
		-32-301,			Supplemental Flight			
		-32S-300,			Manual for Pull			
		-32R-301,			Operated Cable Valve			
		-32-301T,			dated 2/4/2000. (SVS V)			
		-32R-300,						
		-32R-301T						

^{*} or later FAA Approved Revision

For

INSTALLATION OF PRECISE FLIGHT STANDBY VACUUM SYSTEM

	1	_	1		T		issue Date: December 7	, 1304
Item	Aircraft Make	Aircraft Model	Original Type Certificate Number	Certification Basis for Alteration	FAA Approved Airplane Flight Manual Supplement*	FAA Approved Number	d Drawing* REV	AML Amdt. Date
17	Piper Aircraft Corp.	PA-28-140, -28-141, -28-150, -28-151, -28-160, -28-180, -28R-180, -28S-180, -28-235, -28-181, -28-161, -28R-200, -28R-201, -28R-201T, -28-236, -28RT-201T, -28-201T, -28-201T,	2A13-38	CAR 3	Supplemental Flight Manual for SA2167NM dated 8/11/99. (SVS III)	SVS III Engineering Drawing 000V0000 And Installation Report No. 50050	Rev. , dated 3/10/2000 Rev. 25, dated 8/26/99	5/4/2000
18	Piper Aircraft Corp.	PA-28-140, -28-141, -28-150, -28-151, -28-160, -28-180, -28R-180, -28S-180, -28-235, -28-181, -28-161, -28R-200, -28R-201, -28R-201T, -28-236, -28RT-201, -28RT-201T, -28-201T,	2A13-38	CAR 3	Supplemental Flight Manual for Push Operated Cable Valve dated 2/4/2000. (SVS V) OR Supplemental Flight Manual for Pull Operated Cable Valve dated 2/4/2000. (SVS V)	SVS V Engineering Drawing 000V0000 And Installation Report No. 08072	Rev. , dated 3/10/2000 Rev. A, dated 12/22/1999	5/4/2000

^{*} or later FAA Approved Revision

For

INSTALLATION OF PRECISE FLIGHT STANDBY VACUUM SYSTEM

Issue Date: December 7, 1984 Original FAA Approved Airplane FAA Approved Drawing* Type Certification Flight Manual AML Certificate Aircraft Aircraft Basis for Supplement* Amdt. Item: Number Make Model Alteration REV Date Number SVS III Engineering Drawing PA-36-285. FAR 23 Supplemental Flight 19 A9SO 5/4/2000 Piper -36-300, -36-375 Manual for SA2167NM 000V0000 Rev.-. dated 3/10/2000 Aircraft dated 8/11/99. (SVS III) And Corp. Installation Report No. 50050 Rev. 25, dated 8/26/99 SVS V Engineering Drawing 20 PA-36-285. A9SO FAR 23 Piper Supplemental Flight 5/4/2000 -36-300, -36-375 Manual for Push 000V0000 Aircraft Rev.-. dated 3/10/2000 Operated Cable Valve Corp. And dated 2/4/2000. (SVS V) Installation Report No. 08072 Rev.-, dated 12/22/1999 Supplemental Flight Manual for Pull Operated Cable Valve dated 2/4/2000. (SVS V) SVS III Engineering Drawing 21 Piper PA-38-112 A18SO FAR 23 Supplemental Flight 5/4/2000 Aircraft Manual for SA2167NM 000V0000 Rev.-. dated 3/10/2000 Corp. dated8/11/99. (SVS III) And A25SO FAR 23 PA-46-310P Installation Report No. 50050 Rev. 25, dated 8/26/99 22 Supplemental Flight SVS V Engineering Drawing Piper PA-38-112 A18SO FAR 23 5/4/2000 000V0000 Aircraft Manual for Push Rev.-. dated 3/10/2000 Corp. Operated Cable Valve And dated 2/4/2000. (SVS V) Installation Report No. 08072 Rev.-, dated 12/22/1999 OR PA-46-310P A25SO FAR 23 Supplemental Flight Manual for Pull Operated Cable Valve dated 2/4/2000. (SVS V)

FAA Approved: 6

Acting Manager, Seattle Aircraft

/Certification Office

Amended: May 4, 2000_

^{*} or later FAA Approved Revision