United States of America

Bezentment of Orangoutation—Federal Avistion Administration

Supplemental Type Certificate

Number SA2162NM

This cortificate, issued to

63120 Powell Butte Rd. Precise Flight, Inc. Bend, OR 97701 cartifies that the change in the type design for the following product with the limitations and conditions thorefor as specified hornon mosts the cuive orthiness requirements of Part "of the "Augustations.

Original Product Type Cartificate Number:

"See attached FAA Approved Model List (AML)

No. SA2162NM for list of approved airplane models Make Hodel.

and applicable airworthiness regulations

in accordance with the appropriate Precise Flight, Inc. Engineering Drawing listed on FAA Approved Model List Description of the Type Design Change: Installation of Precise Flight, Inc. Stand-By Vacuum System (SVS) No. SA2162NM, dated April 14, 2000, or later FAA approved revision.

STC No. SE1779NM or SE1780NM, dated December 28, 1982, or later FAA approved revision. Also, modified NOTE: As a prerequisite to this change, the lengine must be modified in accordance with Precise Flight, Inc. aircraft must be equipped with a vacuum indicutor.

Similations and Sonditions: 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. SA2162NM 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. SA2162NM must be This approval should not be extended to other aircraft of this model on which other previously approved maintained as part of the permaneut 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.

surroadored, susponded, revolved, or a tormination date is otherwise established by the Shiministrator of the This cartificate and the supporting data which is the basis for approval shull ramain in effect until Federal Seriation Staministration.

Date of application. Date of ismance.

November 7, 1983 October 31, 1983

Rate resistancel

December 16, 1983; December 7, 1984; July 25, 1990; April 14, 2000 Pate amended!



(Signature) the Administrator

Acting Manager, Seattle Aircraft Certification Office

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

FAA APPROVED MODEL LIST NO. SA2162NM PRECISE FLIGHT STANDBY VACUUM SYSTEM LIST OF ACTIVE PAGES

PAGE	AMENDMENT DATE
2	April 14, 2000
3	April 14, 2000
4	April 14, 2000
5	April 14, 2000
6	April 14, 2000
7	April 14, 2000
8	April 14, 2000
9	April 14, 2000
10	April 14, 2000
11	April 14, 2000

AMENDED-DATE: April 14, 2000

FAA Approved:

Acting Manager, Scattle Aircraft Certification Office

For

INSTALLATION OF PRECISE FLIGHT STANDBY VACUUM SYSTEM

	Aircraft	Aircraft	Original Type Certificate	Certification Basis for	FAA Approved Airplane Flight Manual Supplement*	FAA Approved	d Drawing*	AML Amdt.
Item	Make	Model	Number	Alteration	очрыетен	Number	REV	Date
1	Cessna	120, 140	A768	CAR 4a	Supplemental Flight Manual for SA2162NM 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	4/14/2000
2	Cessna	120, 140	A768	CAR 4a	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	4/14/2000
3	Cessna	140A	5A2	CAR 3, (CAR 4a)	Supplemental Flight Manual for SA2162NM 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	4/14/2000
4	Cessna	140A	5A2	CAR 3, (CAR 4a)	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	4/14/2000

^{*} or later FAA Approved Revision

For

INSTALLATION OF PRECISE FLIGHT STANDBY VACUUM SYSTEM

							1330C Date. May 25, 130	
	Aircraft	Aircraft	Original Type Certificate	Certification Basis for	FAA Approved Airplane Flight Manual Supplement*	FAA Approved		AML Amdt.
Item	Make	Model	Number	Alteration		Number	REV	Date
5	Cessna	150, 150A, 150B, 150C, 150D, 150E, 150F, 150G, 150H, 150J, 150K, 150L, A150L, 150M, 152, A152, A150K, 150M	3A19	CAR Part 3	Supplemental Flight Manual for SA2162NM 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	4/14/2000
6	Cessna	150, 150A, 150B, 150C, 150D, 150E, 150F, 150G, 150H, 150J, 150K, 150L, A150L, 150M, 152, A152, A150K, 150M	3A19	CAR Part 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. 08074	Rev, dated 3/10/2000 Rev, dated 12/22/1999	4/14/2000

^{*} or later FAA Approved Revision

For

INSTALLATION OF PRECISE FLIGHT STANDBY VACUUM SYSTEM

			Original Type	Certification	FAA Approved Airplane Flight Manual	FAA Approved	Drawing*	AML
	Aircraft	Aircraft	Certificate	Basis for	Supplement*			Amdt.
Item	Make	Model	Number	Alteration	Оиррістісті	Number	REV	Date
7	Cessna	170, 170A, 170B	A799	CAR Part 3	Supplemental Flight Manual for SA2162NM 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	4/14/2000
8	Cessna	170,170A, 170B	A799	CAR Part 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	4/14/2000
9	Cessna	172, 172A, 172B, 172C, 172D, 172E, 172F, (USAF T- 41A) 172I, K, L, M, N, P, 172Q	3A12	Part 23	Supplemental Flight Manual for SA2162NM 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	4/14/2000
10	Cessna	172, 172A, 172B, 172C, 172D, 172E, 172F, (USAF T- 41A) 172I, K, L, M, N, P, 172Q	3A12	Part 23	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	4/14/2000

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For

INSTALLATION OF PRECISE FLIGHT STANDBY VACUUM SYSTEM

	Aircraft	Aircraft	Original Type Certificate	Certification Basis for	FAA Approved Airplane Flight Manual Supplement*	FAA Approved	Drawing*	AML Amdt.
Item	Make	Model	Number	Alteration		Number	REV	Date
11	Cessna	175, 175A, 175B, 175C, P172D, R172E, (USAFT-41B, USAFT41-3,-41D) R172F, (USAFT-41D, -41C) R172G, (USAFT-41D), R172H, (USAFT-41D), R172J, R172K, 172RG	3A17	CAR Part 3	Supplemental Flight Manual for SA2162NM 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	4/14/2000
12	Cessna	175, 175A, 175B, 175C, P172D, R172E, (USAFT-41B, USAFT41-3,-41D) R172F, (USAFT-41D, -41C) R172G, (USAFT-41D), R172H, (USAFT-41D), R172J, R172K, 172RG	3A17	CAR Part 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	4/14/2000
13	Cessna	177,177A,177B 177RG	A13CE A20CE	FAR 23	Supplemental Flight Manual for SA2162NM 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	4/14/2000
14	Cessna	177, 177A, 177B 177RG	A13CE A20CE	FAR 23	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	4/14/2000

^{*} or later FAA Approved Revision

For

INSTALLATION OF PRECISE FLIGHT STANDBY VACUUM SYSTEM

			Original			FAA Approved	Drawing*	
Item	Aircraft Make	Aircraft Model	Type Certificate Number	Certification Basis for Alteration	FAA Approved Airplane Flight Manual Supplement*	Number	REV	AML Amdt. Date
15	Cessna	180, 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, 180J, 180K	5A6	CAR Part 3	Supplemental Flight Manual for SA2162NM 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	4/14/2000
16	Cessna	180, 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, 180J, 180K	5A6	CAR Part 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	4/14/2000
17	Cessna	182, 182A, 182B, 182C, 182D, 182E, 182F, 182G, 182H, 182J, 182K, 182L, 182M, 182N, 182P, 182Q, 182R, 182RG, T182, T182RG, T182R	3A13	CAR Part 3	Supplemental Flight Manual for SA2162NM 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	4/14/2000
18	Cessna	182, 182A, 182B, 182C, 182D, 182E, 182F, 182G, 182H, 182J, 182K, 182L, 182M, 182N, 182P, 182Q, 182R, 182RG, T182, T182RG, T182R	3A13	CAR Part 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	4/14/2000

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For

INSTALLATION OF PRECISE FLIGHT STANDBY VACUUM SYSTEM

	issue Date. Way 23, 1900									
	Aircraft	Aircraft	Original Type Certificate	Certification Basis for	FAA Approved Airplane Flight Manual Supplement*	FAA Approved	I Drawing*	AML Amdt.		
Item	Make	Model	Number	Alteration	• •	Number	REV	Date		
19	Cessna	185, 185A, 185B, 185C, 185D, 185E, A185E, A185F	3A24	CAR Part 3	Supplemental Flight Manual for SA2162NM 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	4/14/2000		
20	Cessna	185, 185A, 185B, 185C, 185D, 185E, A185E, A185F	3A24	CAR Part 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	4/14/2000		
21	Cessna	188, 188A, 188B, A188A, A188B, T188C	A9CE	FAR Part 21	Supplemental Flight Manual for SA2162NM 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	4/14/2000		
22	Cessna	188, 188A, 188B, A188A, A188B, T188C	A9CE	FAR Part 21	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	4/14/2000		

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For

INSTALLATION OF PRECISE FLIGHT STANDBY VACUUM SYSTEM

Item	Aircraft	Aircraft	Original Type Certificate Number	Certification Basis for	FAA Approved Airplane Flight Manual Supplement*	FAA Approved		AML Amdt.
	Make	Model		Alteration		Number	REV	Date
23	Cessna	206, P206, -A, -B, - C, -D, -E, TP206A, -B, -C, -D, -E, U206-A, -B, -C, -D, -E, -F, -G, TU206A, -B, -C, -D, -E, -F	A4CE	CAR Part 3	Supplemental Flight Manual for SA2162NM 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	4/14/2000
24	Cessna	206, P206, -A, -B, - C, -D, -E, TP206A, -B, -C, -D, -E, U206-A, -B, -C, -D, -E, -F, -G, TU206A, -B, -C, -D, -E, -F	A4CE	CAR Part 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	4/14/2000
25	Cessna	207, 207A, T207, T207A	A16CE	Part 23	Supplemental Flight Manual for SA2162NM 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	4/14/2000
26	Cessna	207, 207A, T207, T207A	A16CE	Part 23	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	4/14/2000

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For

INSTALLATION OF PRECISE FLIGHT STANDBY VACUUM SYSTEM

Issue Date: May 23, 1988

	ISSUE Date. May 25, 1900							00
Item	Aircraft	Aircraft	Original Type Certificate Number	Certification Basis for	FAA Approved Airplane Flight Manual Supplement*	FAA Approved		AML Amdt.
item	Make	Model	Number	Alteration		Number	REV	Date
27	Cessna	210, 210A, 210B, 210C, 210D, 210E, 210F, 210-5 (205), -5A, (205A), T210F, 210G, T- 210G, 210H, T- 210H, 210J, 205P, T-210J, 210K, T210L, 210L, 210M, T210M, 210N, P210N, T210N, 205T, 210R	3A21	CAR Part 3	Supplemental Flight Manual for SA2162NM 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	4/14/2000
28	Cessna	210, 210A, 210B, 210C, 210D, 210E, 210F, 210-5 (205), -5A, (205A), T210F, 210G, T- 210G, 210H, T- 210H, 210J, 205P, T-210J, 210K, T210L, 210L, 210M, T210M, 210N, P210N, T210N, 205T, 210R	3A21	CAR Part 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	4/14/2000

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	Aircraft	Aircraft	Original Type Certificate	Certification Basis for	FAA Approved Airplane Flight Manual Supplement*	FAA Approved	I Drawing*	AML Amdt.
Item	Make	Model	Number	Alteration		Number	REV	Date
29	Cessna	P210R, 205U, T210R, 210-5, 210-5A	3A21	CAR Part 3	Supplemental Flight Manual for SA2162NM 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	4/14/2000
30	Cessna	P210R, 205U, T210R, 210-5, 210-5A	3A21	CAR Part 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	4/14/2000
31	Cessna	305A (USAF 0-1A) 305C(USAF 0-1E) 305D(USAF 0-1F) 305F	5A5	Part 23	Supplemental Flight Manual for SA2162NM 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	4/14/2000
32	Cessna	305A (USAF 0-1A) 305C(USAF 0-1E) 305D(USAF 0-1F) 305F	5A5	Part 23	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	4/14/2000

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For

INSTALLATION OF PRECISE FLIGHT STANDBY VACUUM SYSTEM

			Original Type	Certification	FAA Approved Airplane Flight Manual	FAA Approved	Drawing*	AML
	Aircraft	Aircraft	Certificate	Basis for	Supplement*			Amdt.
Item	Make	Model	Number	Alteration		Number	REV	Date
33	Cessna	305B (USAF T0-1D) 305E (0-1D OR 01F)	3A14	CAR Part 3	Supplemental Flight Manual for SA2162NM 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	4/14/2000
34	Cessna	305B (USAF T0-1D) 305E (0-1D OR 01F)	3A14	CAR Part 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	4/14/2000
35	Cessna	321 (NAVY OE-2)	3A11	Part 23	Supplemental Flight Manual for SA2162NM 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	4/14/2000
36	Cessna	321 (NAVY OE-2)	3A11	Part 23	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	4/14/2000

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