

SA 954 CH-A

United States of America

Department of Transportation — Federal Aviation Administration Supplemental Type Certificate

Number SA4528NM

This certificate, issued to Hartzell Propeller, Inc.
One Propeller Place
Piqua, OH 45356-2634

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part 3 of the Civil Air Regulations.* *See Type Certificate Data Sheet No. 2A13 for complete certification basis.

Original Product — Type Certificate Number: 2A13
Make: Piper
Model: PA-28R-180, PA-28R-200, PA-28R-201, PA-28RT-201

Description of Type Design Change:
Installation of a Hartzell HC-C3YR-1RF/F7282, constant speed propeller and Hartzell 835-47(P) or 835-52(P) spinner, in accordance with either Robert A. Craner Installation Instructions No. 6, dated November 28, 1989 or Hartzell Instructions For Installation dated March 31, 1993, or later FAA approved revision.

- Limitations and Conditions:*
1. Compatibility of this design change with previously approved modifications must be determined by the installer.
 2. Robert A. Craner Airplane Flight Manual Supplement No. 6, dated November 30, 1989, or Hartzell Airplane Flight Manual Supplement dated February 10, 1995, or later FAA approved revision is required with this installation. (See Continuation Sheet Page 3 For Additional Limitations.)

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

Date of application: July 5, 1988

Date issued: December 21, 1992

Date of issuance: January 26, 1989

Date amended: December 14, 1989,
February 10, 1995

By direction of the Administrator



Royace H. Prather

Royace H. Prather (Signature)
Manager, Propulsion Branch
Chicago Aircraft Certification Office
(Title)

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

United States of America
Department of Transportation—Federal Aviation Administration
Supplemental Type Certificate
(Continuation Sheet)

Number

SA4528NM

Date Amended: February 10, 1995

LIMITATIONS AND CONDITIONS (continued):

3. Propeller and Propeller Limits:

Hartzell HC-C3YR-1RF/F7282 constant speed.
Hub Model: HC-C3YR-1RF
Blade Model: F7282

Diameter: 74" Maximum
73" Minimum

Pitch Settings at 30" Station

Low: $9.2^\circ \pm 0.1^\circ$
High: $30^\circ \pm 0.5^\circ$

4. Avoid continuous operation below 15 inches manifold pressure between 1950 and 2350 RPM.

5. Tachometer: Normal operating range
(Green Arc) 500 to 2700 RPM.
Maximum continuous power
(Red Radial) 2700 RPM.

Note 1. Noise Characteristics:

This modification did not increase the noise level and was not considered an "acoustical change" as defined in Paragraph 21.93(b), Amendment 21.63, of the Federal Aviation Regulations.

- END -

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

United States of America
Department of Transportation — Federal Aviation Administration
Supplemental Type Certificate

Number SA4528NM

This certificate, issued to Hartzell Propeller, Inc.
One Propeller Place
Piqua, Ohio 45356

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part 3 of the Civil Air Regulations.* *See Type Certificate Data Sheet No. 2A13 for complete certification basis.

Original Product — Type Certificate Number: 2A13
Make: Piper
Model: PA-28R-200

Description of Type Design Change: Installation of a Hartzell HC-C3YR-1RF/F7282 constant speed propeller in accordance with Robert A. Craner Installation Instructions No. 6, dated November 28, 1989, or later FAA approved revision and Robert A. Craner FAA Approved Airplane Flight Manual Supplement No. 6, dated November 30, 1989, or later FAA approved revision is required with this installation.

Limitations and Conditions: This approval should not be extended to other specific airplanes of these models on which other previously approved modifications are incorporated, unless it is determined that the interrelationship between this change and any of those other previously approved modifications will introduce no adverse effect upon the airworthiness of that airplane.
Continued on Page 3 of this STC.

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

Date of application: July 5, 1988

Date reissued: December 21, 1992

Date of issuance: January 26, 1989

Date amended: December 14, 1989



By direction of the Administrator

John S. Hartley
(Signature)
ACTING Manager, Los Angeles Aircraft
Certification Office

(Title)

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

United States of America
Department of Transportation—Federal Aviation Administration
Supplemental Type Certificate
(Continuation Sheet)

Number SA4528NM

SUPPLEMENTAL TYPE CERTIFICATE ADDENDUM

Limitations and Conditions:

1. Propeller and Propeller Limits Hartzell HC-C3YR-1RF/F7282 constant speed
Hub Model: HC-C3YR-1RF
Blade Model: F7282

Diameter: 74" maximum
73" minimum

Pitch Settings at 30" station
Low: $9.2^{\circ} + 0.1^{\circ} / -0.1^{\circ}$
High: $30^{\circ} + 0.5^{\circ} / -0.5^{\circ}$

2. Avoid continuous operation below 15 inches manifold pressure between 1950 and 2350 RPM.
3. Tachometer: Normal operating range (Green Arc) 500 to 2700 RPM,
Maximum continuous power (Red Radial) 2700 RPM.

NOTE 1. Noise Characteristics: This modification did not increase the noise level and was not considered an "acoustical change" as defined in Paragraph 21.93(b), Amendment 21.63, of the Federal Aviation Regulations.

-END-

United States of America
Department of Transportation — Federal Aviation Administration
Supplemental Type Certificate

Number SA4528NM

SUPERSEDED	
<input type="checkbox"/> AMENDMENT	DATED.....12/21/89
<input checked="" type="checkbox"/> REISSUANCE	
FEDERAL AVIATION ADMINISTRATION NORTHWEST MOUNTAIN REGION LOS ANGELES AIRCRAFT CERTIFICATION OFFICE	

This certificate, issued to Robert A. Craner

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part 3* of the Civil Air Regulations. *See Type Certificate Data Sheet No. 2A13 for complete certification basis.

Original Product — Type Certificate Number: 2A13

Make: Piper

Model: PA-28R-200

Description of Type Design Change: Installation of a Hartzell HC-C3YR-1RF/F7282 constant speed propeller in accordance with Robert A. Craner Installation Instructions No. 6, dated November 28, 1989, or later FAA approved revision and Robert A. Craner FAA Approved Airplane Flight Manual Supplement No. 6, dated November 30, 1989, or later FAA approved revision is required with this installation.

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

Continued on Page 3 of this STC.

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

Date of application: July 5, 1988

Date reissued:

Date of issuance: January 26, 1989

Date amended: December 14, 1989



By direction of the Administrator

Fredrick Lee

Manager, Los Angeles Aircraft Certification Office

(Title)

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

INSTRUCTIONS: The transfer endorsement below may be used to notify the appropriate FAA Regional Office of the transfer of this Supplemental Type Certificate.

The FAA will reissue the certificate in the name of the transferee and forward it to him.

TRANSFER ENDORSEMENT

Transfer the ownership of Supplemental Type Certificate Number SA4528NM

to *(Name of transferee)* HARTZELL PROPELLER INC.

(Address of transferee) ONE PROPELLER PLACE
(Number and street)

PIQUA, OHIO 45356
(City, State, and ZIP code)

from *(Name of grantor) (Print or type)* ROBERT A. CRANER

(Address of grantor) 2401 GONDAR AVENUE
(Number and street)

LONG BEACH, CA 90815
(City, State, and ZIP code)

Extent of Authority (if licensing agreement): _____

Date of Transfer: 4/18/91

Signature of grantor *(In ink)*: Robert A Craner

United States of America
Department of Transportation—Federal Aviation Administration
Supplemental Type Certificate
(Continuation Sheet)

Number SA4528NM

SUPPLEMENTAL TYPE CERTIFICATE ADDENDUM

Limitations and Conditions:

1. Propeller and Propeller Limits
Hartzell HC-C3YR-1RF/F7282 constant speed
Hub Model: HC-C3YR-1RF
Blade Model: F7282

Diameter: 74" maximum
73" minimum

Pitch Settings at 30" station
Low: $9.2^{\circ} + 0.1^{\circ} / -0.1^{\circ}$
High: $30^{\circ} + 0.5^{\circ} / -0.5^{\circ}$
2. Avoid continuous operation below 15 inches manifold pressure between 1950 and 2350 RPM.
3. Tachometer: Normal operating range (Green Arc) 500 to 2700 RPM,
Maximum continuous power (Red Radial) 2700 RPM.

NOTE 1. Noise Characteristics: This modification did not increase the noise level and was not considered an "acoustical change" as defined in Paragraph 21.93(b), Amendment 21-63, of the Federal Aviation Regulations.

-END-

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

United States of America
Department of Transportation — Federal Aviation Administration
Supplemental Type Certificate

Number SA4528NM

This certificate, issued to Robert A. Craner

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part 3 of the Civil Air*

Regulations. *See Type Certificate Data Sheet No. 2A13 for complete certification basis.

Original Product — Type Certificate Number: 2A13

Make: Piper

Model: PA-28R-200, Serial Nos. 28R-35001 through 28R-7635516

Description of Type Design Change: Installation of a Hartzell HC-C3YR-1RF/F7282 constant speed propeller in accordance with Robert A. Craner Installation Instructions No. 6, dated December 7, 1988, or later FAA approved revision and Robert A. Craner FAA Approved Airplane Flight Manual Supplement No. 6, dated January 25, 1989, or later FAA approved revision is incorporated with this installation.

Limitations and Conditions: This approval should not extend to other specific airplanes of these models on which other previously approved modifications are incorporated, unless it is determined that the interrelationship between this change and any of those other previously approved modifications will introduce no adverse effect upon the airworthiness of that airplane.

Continued on Page 3 of this STC.

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

Date of application: July 5, 1988

Date reissued:

Date of issuance: January 26, 1989

Date amended:



By direction of the Administrator

Fredrick Lee
(Signature)

Manager, Los Angeles Aircraft
Certification Office

(Title)

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

This certificate may be transferred in accordance with FAR 21.47.

United States of America
Department of Transportation—Federal Aviation Administration
Supplemental Type Certificate
(Continuation Sheet)

Number SA4528NM

SUPPLEMENTAL TYPE CERTIFICATE ADDENDUM

Limitations and Conditions:

1. Propeller and Propeller Limits
Hartzell HC-C3YR-1RF/F7282 constant speed
Hub Model: HC-C3YR-1RF
Blade Model: F7282

Diameter: 74" maximum
73" minimum

Pitch Settings at 30" station
Low: $9.2^{\circ} + 0.1^{\circ} / -0.1^{\circ}$
High: $30^{\circ} + 0.5^{\circ} / -0.5^{\circ}$
2. Avoid continuous operation below 15 inches manifold pressure between 1950 and 2350 RPM.
3. Tachometer: Normal operating range (Green Arc) 500 to 2700 RPM,
Maximum continuous power (Red Radial) 2700 RPM.
4. Noise Characteristics: This modification did not increase the noise level and was not considered on "acoustical change" as defined in paragraph 21.93(b) of the Federal Aviation Regulations.

-END-

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