



United States of America
Department of Transportation
Federal Aviation Administration

Supplemental Type Certificate

Number SA3923WE

This certificate issued to: BGDR.LLC
3511 Silverside Road, Suite 105
Wilmington, DE 19810

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

Original Product – Type Certificate Number: 3A25

Make: Cessna
Model: 340, 340A, (Serial Nos. 340A0001 through 340A0600)

Description of Type Design Change:

Installation of Lycoming TIO-540-R2AD engines in accordance with Riley Aircraft Corporation Top Drawing List R346000, Revision W, dated June 1, 1979, or later FAA approved revision. FAA approved Riley Aircraft Corporation Airplane Flight Manual for Cessna 340/340A, dated June 1, 1979, or later FAA approved revisions, is required as part of this installation.

Limitations and Conditions:

(See continuation Sheet 3 of 8)

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

Date of application: December 15, 1978

Date reissued: August 19, 1991; December 10, 2012; January 8, 2013

Date of issuance: June 1, 1979

Date amended:

By direction of the Administrator

Signature _____
Scott A. Horn

Title _____
Manager, Fort Worth Aircraft Certification Office,
Southwest Region

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 or made available to third persons by licensing agreements in accordance with 14 CFR 21.47. Possession of this Supplemental Type Certificate (STC) document by persons other than the STC holder does not constitute rights to the design data nor to alter an aircraft, aircraft engine, or propeller. The STC's supporting documentation (drawings, instructions, specifications, flight manual supplements, etc.) is the property of the STC holder. An STC holder who allows a person to use the STC to alter an aircraft, aircraft engine, or propeller must provide that person with written permission acceptable to the FAA. (Ref. 14 CFR 21.120).



Supplemental Type Certificate

(Continuation Sheet)

Number: SA3923WE

Date of Issuance: June 1, 1979

Reissuance Date: January 8, 2013

Limitations and Conditions (Continued):

The approval of this design change applies to certain Models 340 and 340A only. The installer must determine whether this design change is compatible with previously approved modifications. If the holder agrees to permit another person to use this certificate to alter a product, the holder must give the other person written evidence of that permission. Riley wing luggage locker auxiliary fuel tanks per STC SA2482SW are not approved with this installation.

The conditions and limitations of Aircraft Specification No. 3A25 apply except as follows:

This data sheet, which is a part of Supplemental Type Certificate No. SA3923WE, prescribes conditions and limitations under which the product for which the STC was issued meets the airworthiness requirements of the Federal Aviation Regulations.

I - Model Cessna 340, 340A (Normal Category) as modified by STC SA3923WE, approved June 1, 1979.

Engines Two Avco Lycoming TIO-540-R2AD

Fuel 100/130 Minimum grade aviation gasoline, Low Lead Aviation Grade 100LL is a suitable alternate

Engine Limits For all operations, 2575 rpm, 350 hp, sea level 44.0 in. Hg MP, up to critical altitude of 16,800 ft. in standard atmosphere. Above 16,800 ft., the following MP applies for maximum rpm.

Table with 2 columns: Altitude (ft.) and Maximum Allowable MP (in. Hg). Rows include altitudes 19,000, 21,000, 23,000, and 25,000 with corresponding MP values.

Propeller and Propeller Limits Two Hartzell full feathering, constant speed, controllable 3-bladed propellers

- (a) Hartzell hubs: left HC-E3YR-2ATF, right HC-E3YR-2ALTF
(b) Hartzell blades: left FC8468B-8R, right FJC8468B-8R
(c) Diameters: Maximum 78 inches, Minimum 78 inches (No cutoff is permitted)
(d) Pitch settings at 30 inch station: low 16 degrees, feathered 81 degrees +/- 1 degree
(e) Hartzell hydraulic governor: left F-6-24, right F-8-48L

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Supplemental Type Certificate

(Continuation Sheet)

Number: SA3923WE

Date of Issuance: June 1, 1979

Reissuance Date: January 8, 2013

Limitations and Conditions (Continued):

Propeller
Synchrophaser Hartzell P/N C-4362-1

Maximum Permissible
Temperatures

Cylinder head (Bayonet)	500°F	
Oil inlet	245°F	
Exhaust gas	1650°F	
*Fuel injector inlet air	400°F	

Pressure Limits

	<u>Minimum</u> (psi)	<u>Maximum</u> (psi)	<u>Injector in</u> <u>Idle Cutoff</u> (psi)
*Fuel pressure at inlet to engine fuel pump inlet	-2	65	55
	<u>Maximum</u> (psi)	<u>Normal Operation</u> (psi)	
Fuel injector nozzle pressure (Fuel Injector, Bendix RSA-10DB1)	23.6	2.0 psi to 23.6	

Fuel Flow

	<u>Minimum (GPH)</u>	<u>Maximum (GPH)</u>
	11	41.5

*Reference engine data only, not specifically required instrumentation in this aircraft.

Oil Pressure

	<u>Minimum</u> (psi)	<u>Maximum</u> (psi)
Normal operating	55	90
Idle	25	--
Starting and Warm-up	--	100

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Supplemental Type Certificate

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Date of Issuance: June 1, 1979

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Limitations and Conditions (Continued):

Oil Capacity 24 qt. (12 qt. each engine)

Control Surfaces Modification meets FAA required dual trim elevators (Riley Drawing R346025)

Alternator Prestolite alternator (two), 24 volt, P/N ALV6403LS
Maximum electrical load per alternator;

- (a) 60 amperes ground operation
- (b) 80 amperes in-flight

Airspeed Limits S/N 340-0001 through 340-0300

- (KIAS)
- (1) This aircraft must be operated as a normal Category airplane in compliance with the operating limitations stated in the form of placards, markings, and manuals
 - (2) No acrobatic maneuvers, including spins, approved
 - (3) Air minimum control speed: 82 KIAS
 - (4) Maximum gear extended speed: 138 KIAS
 - (5) Maximum gear operating speed: 138 KIAS
 - (6) Maximum flap extended speed: (15° Flap)
156 KIAS
(45° Flap)
138 KIAS
 - (7) Maximum maneuvering speed: 163 KIAS
 - (8) Landing with cabin pressurized prohibited
 - (9) The stall warning system is inoperative when battery switch is in the OFF position

S/N 340-0301 and on

- (1) This aircraft must be operated as a Normal Category airplane in compliance with the operating limitations stated in the form of placards, markings, and manuals
- (2) No acrobatic maneuvers, including spins, approved
- (3) Air minimum control speed: 82 KIAS
- (4) Maximum gear operating speed: 139 KIAS
- (5) Maximum gear extended speed: 139 KIAS
- (6) Maximum flap extended speed: (15° Flap)
160 KIAS
(45° Flap)
139 KIAS
- (7) Maximum maneuvering speed: 163 KIAS
- (8) Landing with cabin pressurized prohibited

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Date of Issuance: June 1, 1979

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Limitations and Conditions (Continued):

Airspeed Limits S/N 340A0001 through 340A0400

(KIAS) (cont)

- (1) This aircraft must be operated as a Normal Category airplane in compliance with the operating limitations stated in the form of placards, markings, and manuals
- (2) No acrobatic maneuvers, including spins, approved
- (3) Air minimum control speed: 82 KIAS
- (4) Maximum gear operating speed 139 KIAS
- (5) Maximum gear extended speed: 139 KIAS
- (6) Maximum flap extended speed: (15° Flap)
160 KIAS
(45° Flap)
141 KIAS
- (7) Maximum maneuvering speed: 163 KIAS
- (8) Landing with cabin pressurized prohibited

S/N 340A401 through 340A0600

- (1) This aircraft must be operated as a Normal Category airplane in compliance with the operating limitations stated in the form of placards, markings, and manuals
- (2) No acrobatic maneuvers, including spins, approved
- (3) Air minimum control speed: 82 KIAS
- (4) Maximum gear operating speed 139 KIAS
- (5) Maximum gear extended speed: 139 KIAS
- (6) Maximum flap extended speed: (15° Flap)
160 KIAS
(45° Flap)
141 KIAS
- (7) Maximum maneuvering speed: 163 KIAS
- (8) Landing with cabin pressurized prohibited
- (9) This airplane is approved for day/night VFR conditions and flights into icing conditions if proper optional equipment is installed and operational

Fuel Tank Capacity

Refer to Type Certificate Data Sheet 3A25

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Limitations and Conditions (Continued):

Center of Gravity Limits
(Gear Extended)

Aft Limit:

- (1) Takeoff-153.50 inches aft of reference datum at 6190 pounds with straight line variation to 155.0 at 5220 pounds or less
- (2) Landing-153.8 inches aft of reference datum at 5975 pounds for Model 340 and 5990 pounds for Model 340A with straight line variation to 155.0 at 5220 pounds or less

Forward Limit:

- (1) Takeoff-150.4 inches aft of reference datum at 6190 pounds to 5990 pounds and 146.09 inches aft of reference datum at 5075 pounds or less with straight line variation between these points
- (2) Landing-150.41 inches aft of reference datum at 5975 pounds for Model 340 and 5990 pounds for Model 340A and 146.09 inches aft of reference datum at 5075 pounds or less with straight line variations between these points.

See Weight and Balance Data in Section 6 of the FAA approved Riley AFM for loading schedule. The reference datum is 100 inches forward of the forward face of the fuselage bulkhead forward of the rudder pedals.

Empty Weight

Refer to Note 1 of the Type Certificate Data Sheet 3A25

Maximum Zero Fuel Weight

5630 lbs.

Maximum Weight

6190 lbs., takeoff
5990 lbs., landing (340A)
5975 lbs., landing (340)

Maximum Baggage

Refer to Type Certificate Data Sheet 3A25

Flight Load Factor Limits

At Design Takeoff Weight of 6190 lbs.
(a) Landing gear up, wing flaps 0°, +3.58g to -1.43g
(b) Landing gear down, wing flaps 45°, +2.0g

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Limitations and Conditions (Continued):

Placards and
Miscellaneous
Limitations

Refer to Riley Drawing R346015, AFM and Type Certificate Data Sheet 3A25 for additional limitations and placards

- (a) When alternate air inlet door is open, cabin must be depressurized
- (b) Takeoff and land on main tip tanks only
- (c) Maximum operating altitude limit 25,000 ft.
- (d) Takeoff, landing, and single engine operation must be with propeller synchrophaser off. Engine rpm must not exceed 2495 rpm when synchrophaser is operative
- (e) Aircraft brake installation per STC SA281GL is required for this installation
- (f) All weight in excess of 5990 lbs. must be fuel in the main tip tanks
- (g) Mixture controls must be full rich for all engine power settings at or above 75 percent power.
- (h) Auxiliary fuel wing tanks for level cruise operation only
- (i) Aerosonic fuel flow indicator totalizer not to be used as fuel quantity gauge

- NOTE 1. Current weight and balance report, based on actual weighing of each modified serial number airplane, together with list of equipment included in certificated empty weight, and loading instructions, must be provided for each aircraft.
- NOTE 2. For placards, instruments, and location, refer to Riley Drawing No. R346015 and Type Certificate Data Sheet 3A25.
- NOTE 3. The Model 340 and 340A airplanes as modified by this STC were shown not to increase the noise levels prior to the change in type design.

-END-

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**SUPPLEMENTAL TYPE CERTIFICATE, FAA FORM 8110-2
(CONTINUED)**

INSTRUCTIONS: The transfer endorsement below may be used to notify the appropriate FAA Aircraft Certification 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:

To (Name of transferee) _____

(Address of transferee) _____

(Number and street) _____

(City, State, and ZIP Code) _____

From (Name of grantor) _____

(Address of grantor) _____

(Number and street) _____

(City, State, and ZIP Code) _____

Extent of Authority (if licensing agreement): _____

Date of Transfer: _____

Signature of grantor: _____