United States Of America
Department of Transportation - Federal Aviation Administration

Supplemental Type Certificate

Number ST09559AC

This Certificate issued to Sierra Industries, Inc.
122 Howard Langford Drive
Uvalde,, TX 78801

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 **23** *of the* **Federal Aviation Regulations.**

Original Product Type Certificate Number: *

Make: *

Model: *

* See attached FAA Approved Model List

Description of Type Design Change: Installation of Williams International Company, L.L.C. FJ44-2A engines for Cessna 500/501 or Williams International Company, L.L.C. FJ44-3A engines for Cessna Model 550 in accordance with Sierra Industries Drawing shown in AML or later FAA approved revision. Sierra Industries, Inc. Airplane Flight Manual Supplements for Cessna Model 501, 500, and 550 is required. (See AML for installation kit no. and AFMS number.)

Limitations and Conditions: Compatibility of this design change with previously approved modifications must be determined by the installer. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

(See continuation sheet 3 of 6)

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: June 12, 1998

Date of issuance: March 14, 2002

Date reissued: 11/24/03; 3/10/06; 3/24/06

Date amended: November 13, 2008

By direction of the Administrator

(*Signature*)
Michele M. Owsley, Manager
Airplane Certification Office,
Southwest Region

(*Title*)

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

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Supplemental Type Certificate

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Supplemental Type Certificate
(Continuation Sheet)

Number ST09559AC

Date of Issuance: March 14, 2002
Date Amended: November 13, 2008

Limitations and Conditions (Continued):

Engines	Two Williams International Co. L.L.C. FJ44-2A turbofans used in combination.		
Fuel	Commercial kerosene Jet A, Jet A-1 and JP-8. These fuels, except JP-8 require the addition of anti-ice additive (MIL-I-27686 or MIL-I-85470); and must be blended into the aircraft fuel in concentrations not less than0.060 percent or more than 0.15 percent by volume.		
Engine Limits	Static thrust standard day, sea level:		
	Takeoff (5 min.)		2300 lb.
	Max. continuous		2300 lb.
	Max. permissible engine rotor speeds:		
	N1 (Fan) 105.2 percent		18,150 r.p.m.
	N2 (Gas Gen.) 98.8 percent		40,700 r.p.m.
	Max. permissible interturbine gas temperatures:		
	Takeoff		820^{o} C.
	Max. continuous		805^{o} C.
	Transient (10 Sec.)		835^{o} C.
Airspeed Limits	V_{MO}	(Maximum operating)	
		(Below 30,900 feet)	259 KIAS
	M_{MO}		
		(Above 30,900 feet)	0.705 Mach
	V_{A}	(Sea Level)	
		See AFMS for variations with weight and altitude.	
	V_{FE}	(Flaps extended)	
		40^{o} (Landing)	176 KIAS
		15^{o} (Takeoff and approach)	202 KIAS
	V_{LO}	(Landing gear operating)	176 KIAS
Maximum Weight	Takeoff		12,500 lb.
	Landing		11,350 lb.
	Zero Fuel		8,600 lb.
	Ramp		12,650 lb.
Fuel Capacity (Gal.)	Configuration SI360-001-1		
	Two wing tanks: Total 339 each; usable 334		
	Configuration SI360-001-3		
	Two wing tanks: Total 287 each; usable 282		
Oil Capacity (Qts.)	Two engine mounted tanks: Total 3.60 each; usable 2.73		

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Number ST09559AC

Date of Issuance: March 14, 2002
Date Amended: November 13, 2008

Limitations and Conditions (Continued):

Maximum Operating Altitude		43,000 Feet
	A/C 500 – 0001 thru – 0213 not incorporating SB21-9	35,000 Feet

Engines: Two Williams International Co. L.L.C. FJ44-3A turbofans used in combination.

Fuel: Commercial kerosene Jet A, Jet A-1, Jet B, JP-4, JP-5 or JP-8. These fuels, except JP-5 require the addition of anti-ice additive (MIL-I-27686 or MIL-I-85470); and must be blended into the aircraft fuel in concentrations not less than 0.10 percent or more than 0.15 percent by volume. JP-5 require the addition of anti-ice additive (MIL-I-27686 or MIL-I-85470); and must be blended into the aircraft fuel in concentrations not less than 0.10 percent or more than 0.20 percent by volume.

Engine Limits

Static thrust standard day, sea level:

Takeoff (5 min.)	2820 lb.
Max. continuous	2820 lb.

Max. permissible engine rotor speeds:

N1 (Fan)	105.2 percent	18,500 r.p.m.
N2 (Gas Gen.)	98.8 percent	41,200 r.p.m.

Max. permissible interturbine gas temperatures:

Takeoff	877° C.
Max. continuous	840° C.
Transient (10 Sec.)	891° C.

Airspeed Limits

V_{MO} (Maximum operating)	
Sea level to 14,000 ft.	260 knots
14,000 ft. to 28,000 ft.	275 knots
Sea level to 30,500 ft.	260 knots
M_{MO} Above 30,500 ft.	0.70 Mach
(S/N 550-0550 through 550-0733)	
V_A (Sea level)	
13,300 ft.	186 knots
See AFM for variations with weight and altitude and optional configurations.	
V_B (Speed for max. gust intensity)	210 knots
V_{FE} (Flaps extended)	
40° (Landing)	174 knots
15° (Takeoff and approach)	200 knots
V_{MCA} (Minimum control speed) Air	75 knots

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Number ST09559AC

Date of Issuance: March 14, 2002
Date Amended: November 13, 2008

Limitations and Conditions (Continued):

V_{MCG} (Minimum control speed) Ground	62 knots
V_{LO} (Landing gear operating) (S/N 550-0001 through 550-0626)	174 knots
V_{LO} (Landing gear operating extend) (S/N 550-0627 through 550-0733)	248 knots
V_{LO} (Landing gear operating retract) (S/N 550-0627 through 550-0733)	198 knots
V_{LE} (Landing gear extended) (S/N 550-0001 through 550-0626)	174 knots
V_{LE} (Landing gear extended) (S/N 550-0627 through 550-0733)	260 knots
V_{SB} (Speed brakes extended	Any speed with or without flaps

*See NOTE 1for restricted VMO for optional fuel weight configuration, S/N 550-0001 through 550-0549.
See NOTE 2 for increased VLO and VLE for S/N 550-0001 through 550- 0626.

Maximum Weight

	550-0001 Through 550-0626	550-0627 Through 550-0733
Takeoff	13,300 lb	14,100 lb
Landing	12,700 lb	13,500 lb
Zero fuel	9,500 lb	. 11,000 lb
Ramp	13,500 lb	14,300 lb

*See NOTE 1 for optional zero fuel weight (S/N 550-0001 through 550-0549)

Fuel Capacity (Gal.) Two wing tanks: Total 376 each; usable 371 each

Oil Capacity (Qts.) Two engine mounted tanks: Total 4.37 each; usable 3.35

Maximum Operating Altitude 5,000 Feet

NOTE 1: Model 550 S/N 550-0001 through 550-0549 conforming to ECR EC04574 or SB550-34-4 are eligible for 11,000 lb. zero fuel weight with V_{MO} reduced to 260 KCAS from 14,000 ft. to 30,500 ft. 11,000 lb. zero fuel weight provision is standard at S/N 550-0550 through 550-0733.

NOTE 2. Model 550 S/N 550-0001 through 550-0505, and S/N 550-0550 through 550-0626 when modified in accordance with Cessna Service Bulletin SB550-32-14 are eligible to operate at the following V_{LO} and V_{LE}:

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	Model 550 *Number* ST09559AC Date of Issuance: March 14, 2002 Date Amended: November 13, 2008 *Limitations and Conditions* (Continued): SB550-32-14	
	11,000 lb. ZFW	9,500 lb. ZFW
V_{LO} (Landing gear operating extend)	248 KCAS	248 KCAS
V_{LO} (Landing gear operating retract)	198 KCAS	198 KCAS
V_{LE} (Landing gear extended)	260 KCAS	275 KCAS