

Supplemental Type Certificate

Number SA3322NM

This certificate, issued to **Soloy, LLC**
450 Pat Kennedy Way, SW
Olympia, WA 98501

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: A16CE
Make: Cessna
Model: 207 and T207, 207A and T207A

Description of the Type Design Change: Installation of the Soloy Turbine Pac (Rolls-Royce 250-C20S engine modified per Soloy STC No. SE2352NM) and related changes in accordance with FAA sealed Soloy Master Drawing List Number 764-300 dated February 25, 1986, or later FAA sealed revisions.

Limitations and Conditions: This approval should not be extended to other aircraft of this model on which other previously approved modifications are incorporated unless it is determined by the installer that the relationship between this change and any of those other previously approved modifications will introduce no adverse effect upon the airworthiness of that aircraft. A copy of this Certificate must be maintained as part of the permanent records for the modified aircraft.

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 Page 3)

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: September 15, 1983

Date reissued: June 13, 1986; August 7, 1995;
December 2, 2004

Date of issuance: April 2, 1986

Date amended: June 21, 1989; October 4, 1991;
March 5, 1992; January 12, 1999;
December 2, 2004



By direction of the Administrator

(Signature)

Acting Manager, Seattle 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.

Supplemental Type Certificate

(Continuation Sheet)

Number SA3322NM

Soloy, LLC

Reissued: 12/2/04

Amended: 6/21/89; 10/4/91; 3/5/92; 1/12/99; 12/2/04

Limitations and Conditions: (continued)

Certain limitations and conditions shown on Type Certificate Data Sheet No. A16CE for the Cessna Models 207, T207, 207A, and T207A remain applicable. The following list contains those limitations and conditions which have been modified and certain unmodified ones which are listed for clarity:

Model: 207, T207, 207A and T207A as modified by this STC (normal category)

Engine: Soloy Turbine Pac Model 780-1000-1
(Rolls-Royce Model 250-C20S modified per STC No. SE2352NM)

Engine Limits: Takeoff Rating (5 min.) 418 hp
Max. Continuous Rating 368 hp

Gas Producer (N₁)

Continuous Operation 105% (53,519 RPM)
Transient Overspeed (15 Sec.) 106% (54,028 RPM)

Propeller Shaft (N_p)

Continuous Operation 100% (1,810 RPM)
Transient Overspeed (15 Sec.) 110% (1,990 RPM)

Torque: Takeoff Rate (5 Min.) 101.4 PSI
Maximum Continuous rating 89.0 PSI

Turbine Outlet Temperature:

Takeoff Rating (5 Min.) 810°C (1,490°F)
Maximum Continuous Rating 738°C (1,360°F)
Transient (6 Sec.) 843°C (1,550°F)

Outside Air Temperature Limits: 100°F (39°C) at sea level, with a reduction of 3.6°F (2°C) per 1000 feet altitude, for all ground and flight operation.

Oil Inlet Temperature:

Maximum 107°C (225°F)
Minimum for starting using
MIL-L-7808G -54°C (-65°F)
MIL-L-23699B -40°C (-40°F)

Oil: Oils approved to MIL-L-7808G or MIL-L-23699B

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(Continuation Sheet)

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Amended: 6/21/89; 10/4/91; 3/5/92; 1/12/99; 12/2/04

Limitations and Conditions: (continued)

Fuel: Maximum fuel temperature is 43.3°C (110°F)
 MIL-T-5624, Grade JP4 or JP5
 MIL-T-83133, Grade JP-8
 ASTM D-1655, Jet B
 ASTM D-1655, Jet A or A1
 JP-1 fuel conforming to ASTM D-1655, Jet A
 Diesel #1 fuel conforming to ASTM D-1655, Jet A
 (See Note 5 and 6 for limitations for cold weather fuel)

Propeller and Propeller Limits:

| | |
|-------------------------------|--|
| Hartzell: | HC-C3YN-5A/FC9587D-2 |
| Diameter: | Not over 95 in. Not under 93 in. |
| Pitch Settings: | (At 30 inch station) High Pitch 81° Low Pitch 5° |
| Hartzell Spinner: | D-3273 |
| Soloy Prop Governor | 780-3356-3 |
| Soloy Prop Overspeed Governor | 780-3360-1 |

| | | |
|-------------------------------|-------------------|-------------------|
| <u>Airspeed Limits (IAS):</u> | Maximum Operating | 153 knots |
| | Maneuvering | 134 knots |
| | Flaps extended | 0°-10° 144 knots |
| | | 10°-30° 100 knots |

Center of Gravity Limits: Center of Gravity Range:
 Forward: +31 inches aft of datum at 2,600 lbs. Or less, with straight line variation to +45 inches aft of datum at 4,000 lbs.
 Aft: +50.5 inches of datum at all weights.
 Reference Datum: Lower Portion of front face of firewall.

| | | |
|----------------------|------------------------|------------|
| <u>Weight Limit:</u> | Maximum Takeoff Weight | 4,000 lbs. |
| | Maximum Landing Weight | 3,800 lbs. |

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Limitations and Conditions: (continued)

Fuel Capacity: 80 gallons (73 gallons usable)
40 gallon tanks in wing at +48 inches.

Maximum Operating Altitude: 25,000 ft.

Oil Capacity: 9.5 quarts at -46.5 inches (see Note 1 for data on system fuel and oil)

Control Surface Movements:

Same as Basic Airplane Except:

Rudder Right 24° 57' ±1°
Left 24° 57' ±1°
(measured perpendicular to rudder hinge line)

Right 22° ±1°
Left 22° ±1°
(measured parallel to O.O.W.L.)

Rudder Balance Limits: +0.00 inch-lbs. Minimum to
+12.43 inch-lbs. Maximum

(+ Denotes Trailing Edge Heavy)

Elevator Tab Free Play Limits:
0.166 inches maximum
(measured at the tab trailing edge)

Flight Idle Limits:
Flight Operations with power control retarded below
FLIGHT IDLE (14psi torque minimum) are prohibited.

Cessna Serial Nos. Eligible:
20700001 through 20700362 (See Note 10)
20700001 through 20700192 (See Note 11)
20700363 through 20700788

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Limitations and Conditions: (continued)

Certification Basis:

Part 23 of the Federal Aviation Regulations, effective February 1, 1965, as amended by 23-1 through 23-6. In addition, effective Serial Numbers 20700483 and up, FAR 23.1559, effective March 1, 1978. FAR 36, dated December 1, 1968, plus amendments 36-1 through 36-6 for serial numbers 20700363 and up; plus certain sections of FAR Part 23, including amendments 23-1 through 23-27, effective December 8, 1980, which are required to maintain the airplane's existing level of airworthiness with the turboprop engine installed.

These sections are:

23.45, 23.49, 23.65, 23.75(d), 23.77, 23.173, 23.175, 23.201, 23.253, 23.335, 23.361, 23.371, 23.629(f), 23.901, 23.903, 23.905, 23.929, 23.937, 23.939, 23.943, 23.951, 23.955, 23.977, 23.991, 23.997, 23.1013, 23.1015, 23.1017, 23.1019, 23.1041, 23.1043, 23.1045, 23.1091, 23.1093, 23.1111, 23.1121, 23.1141, 23.1143, 23.1145, 23.1155, 23.1165, 23.1305, 23.1337, 23.1505, 23.1521, 23.1527, 23.1529, 23.1545, 23.1549, 23.1557, 23.1559.

In addition:

- FAR 23.629(e) as amended by 23-31, effective December 28, 1984.
- Special Federal Aviation Regulation 27, as amended by 27-1 and 27-2.
- Part 36 of the Federal Aviation Regulations (FAR)

Equipment:

The following must be installed in the aircraft for airworthiness certification:

- (a) The basic required equipment as prescribed in the applicable airworthiness Regulations (see Certification Basis)
- (b) The equipment must include a current airplane flight manual plus FAA Approved Soloy Airplane Flight Manual Supplement.
- (c) Stall warning indicator, Cessna Drawing S1672-5.
- (d) Cessna Model 206 Floatplane parts for vertical fin and rudder assembly:

Cessna P/N

Item

| | |
|-----------|--------------------------|
| 1231034-9 | Rudder Assembly |
| 1231062-7 | Rib Assembly – Fin Upper |
| 1231040-1 | Cover – Fin Tip |
| 1212600-7 | Stinger Assembly |

- (e) The aircraft must be equipped with a 28-volt electrical system.

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Limitations and Conditions: (continued)

- Note 1: Current weight and balance data including list of equipment included in certified empty Weight and loading instructions when necessary must be provided for each aircraft at the Time of airworthiness certification for return to service. The certificated empty weight and corresponding center of gravity location must include unusable fuel and full oil as follows:
- Unusable fuel, 49.7 lb. (7 gallons) at +48 inches.
Full oil, 19 lb. (9.5 quarts) at -46.5 inches
- Note 2: The rating shown for the Soloy Turbine Pac 780-1000-1 engine is based on zero ram, dry Inlet air, no accessory loads, and no bleed air; and is available for a U.S. standard atmosphere At sea level.
- Note 3: Information essential to the maintenance and servicing of aircraft modified in accordance with this STC is contained in the applicable Cessna maintenance and overhaul instructions and in the Soloy supplements to these documents.
- Note 4: This change in type design is applicable to the land plane configuration only.
- Note 5: The maximum flight altitude is 25,000 feet, except as restricted below for the use of cold weather Fuels:
- (a) 6,000 feet with fuel at 110°F (43.3°C)
 - (b) 20,000 feet with fuel at 40°F (4.4°C) or below.
 - (c) Linear interpolation applies between the above altitude/fuel temperature data points.
- Note 6: Cold weather fuels and fuel additive:
- (a) MIL-T-5624, Grade JP-4
 - (b) ASTM D-1655, Jet B
 - (c) AVGAS/Jet A, Jet A1 or JP-5 mixture
 - (d) For flight at ambient temperatures of 40°F and below, the fuel used in this aircraft must Have an anti-icing additive in compliance with MIL-I-27686D or E, or Phillips PF A55MB.

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UnitedStatesofAmerica
DepartmentofTransportation_FederalAviationAdministration
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Limitations and Conditions: (continued)

Note 7: Minimum Fuel

Due to the possibility of fuel starvation, takeoff or steep climbs at speeds below V_y (93 KIAS at sea level) with either fuel quantity gauge indicating in the yellow arc (1/8 fuel quantity) are prohibited.

Note 8: Engine Inlet and Induction System Ice Protection

Engine inlet and induction system ice protection must be accomplished by the operation of The engine alternate air system in conjunction with the engine inlet anti-ice system as follows:

- (a) In visible moisture at an OAT of 5°C (41°F) and below.
- (b) While operating in falling or blowing snow regardless of ambient temperature.

Deactivation of the above systems shall not be made until the above mentioned conditions Have been left and all accumulated airframe ice and/or snow has dissipated.

Note 9: Placards must be displayed as indicated in the FAA approved Soloy airplane Flight Manual Supplement.

Note 10: Cessna airplane serial numbers 20700001 through 20700314 require the following equipment to be eligible for turbine conversion under this STC.

- (a) 28 V electrical system
- (b) Forged heavy-duty nose fork and barrel assembly, P/N 1243800-11.
- (c) Optional 80 gallon fuel system (73 gallons usable).

Note 11: Requires installation of Wing tip P/N 0523565 -29 Left and -30 Right.

*****END*****

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