

Supplemental Type Certificate

Number SA00192SE

This certificate, issued to

**BLR Aerospace, LLC
3102 100th Street SW
Everett, WA 98204**

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: A20SO
Make: Piper
Model: PA-31-350

Description of the Type Design Change: Vortex generators manufactured in accordance with Document AA1221, Revision A, dated April 07, 1995, or later Federal Aviation Administration (FAA) approved revision, and installation of the Super Chieftain I takeoff weight increase kit in accordance with Installation Manual AA1236, Revision A, dated April 07, 1995, or later FAA-approved revision, using either option one or two as specified in that document, and Drawing List AA1221, Revision A, dated April 07, 1995, or later FAA-approved revision.

Limitations and Conditions: Approval of this change in type design applies to the above model aircraft only. This approval should not be extended to other aircraft of this model on which other previously approved modifications are incorporated unless it is determined that the relationship between this change and any of those other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of that aircraft. A copy of this certificate and, for installation option two, the Flight Manual Supplement (FMS) Number AFMS-PCH-4, Revision IR, dated April 18, 1995, or later FAA-approved revision, must be maintained as part of the permanent records for the modified aircraft.

(See Continuation Sheets Pages 3 and 4)

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: October 11, 1994

Date reissued: November 23, 2009

Date of issuance: April 21, 1995

Date amended: March 04, 1996; May 30, 2013



By direction of the Administrator

(Signature)

Acting Manager, Seattle Aircraft Certification Office
(Title)

Supplemental Type Certificate

(Continuation Sheet)

Number SA00192SE

BLR Aerospace, LLC

Issued: April 21, 1995

Reissued: November 23, 2009

Amended: March 04, 1996, May 30, 2013

Limitations and Conditions continued:

This Continuation Sheet, which is part of Supplemental Type Certificate (STC) SA00192SE, prescribes the conditions and limitations under which the product for which the STC was issued meets the standards for airworthiness of the Federal Aviation Regulations.

The conditions and limitations of Type Certificate Data Sheet Number A20SO apply except where superseded by the following:

The modification consists of eighty-eight vortex generators on the wing and vertical tail of the airplane and two strakes on each engine nacelle. Replacement vortex generators must be installed if more than four vortex generators are missing from the wing and/or vertical tail.

STC

Compatibility: This increased gross weight STC has **not been shown compatible** with **any wing extension** or **winglet** modifications and is only valid to the weights specified on this modification. The installer is responsible for assessing the impact of concurrently installed STCs which may affect wing loads, particularly fatigue and static requirements. Additional analysis, FAA approved data, and FAA approved inspections may be needed to meet these requirements.

Installation Option One (No FMS)

Operations must be conducted within the limitations of the basic airplane flight manual.

Installation Option Two (FMS required)

Airspeed

Limits (CAS):
 Maneuvering Speed 161 knots
 Minimum Single-Engine Control Speed (red radial) 74 knots
 Minimum Single-Engine Control Speed, V_{MCA} (Flaps 15°) 69 knots

Airspeed Indicator

Markings (IAS):
 Normal Operating Range (green arc) 71 to 185 knots
 Flaps Operating Range (white arc) 67 to 132 knots
 Best Rate-of-Climb Speed – Single-Engine (blue radial) 107 knots
 Minimum Single-Engine Control Speed V_{MCA} 72 knots

Placards:

Change all references to V_{MCA} values on placards to 72 KIAS.
 Change all references to V_P values on placards to 159 KIAS.

(See Continuation Sheet on Page 4)

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 SA00192SE

BLR Aerospace, LLC

Issued: April 21, 1995
Reissued: November 23, 2009
Amended: March 04, 1996, May 30, 2013

Limitations and Conditions continued:

Installation Option Two (FMS required) Continued

CG Range: Takeoff and Flight
 +127.8 inches to +135.0 inches at 7368 pounds
 +126.0 inches to +135.0 inches at 7000 pounds
 +122.0 inches to +135.0 inches at 6200 pounds
 +120.0 inches to +135.0 inches at 5200 pounds or less
 Straight line variation between points given

Maximum Weights: Ramp 7448 pounds
 Takeoff 7368 pounds
 Landing 7000 pounds

Engine Limits: Maximum Takeoff Power (MTOp):
 Maximum RPM 2575 RPM
 Maximum Horsepower 350 hp
 Maximum Manifold Pressure (inches of mercury)
 At and below 15000 feet 49.0
 At 22,300 feet 44.3
 AT 24,000 feet 40.5
 Straight line variation between points given.

Maximum Continuous Power (MCP):
 Maximum RPM 2400 RPM
 Maximum horsepower 315 hp
 Maximum manifold pressure (inches of mercury)
 At and below 18,700 feet 40.0
 At 24,000 feet 31.0
 Straight line variation between points given

Engine Instrument Markings: Tachometer:
 Normal Operating Range (green arc) 500 to 2400 RPM
 Maximum (red radial) 2575 RPM

Manifold Pressure:
 Normal Operating Range (green arc) 18 to 40 inches of mercury
 Maximum (red radial) 49 inches of mercury

Load Factor Limits (g's): Flaps up +3.47, -1.39
 Flaps Down (all settings) +2.00

- END -

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