

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

*Number* SA4974NM

*This certificate issued to*

Radial Engines, Ltd.  
602 E. Renner Field Road  
Goodland, KS 67735

*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 4a of the Civil Air Regulations.*

*Original Product--Type Certificate Number:* A-743  
*Make:* Boeing  
*Model:* A75L3, 75, A75, B75, E75, A75J1, A75N1, B75N1,  
and D75N1

*Description of Type Design Change:* Installation of Jacobs R-755-9, A2, A2M, B2, B2M engine or Jacobs R-755A2, A2M, B2, B2M engine modified for fuel injection per STC SE01288WI with Hamilton Standard 2B20/6135-15 or -16 propeller in accordance with Ray's Aircraft Service, Inc. Drawing List Report No. 1, dated July 27, 1989 or later FAA approved drawing list.

*Limitations and Conditions:* Approval of this change in type design applies to the above model aircraft only. Compatibility of this design change with previously approved modifications must be determined by the installer. A copy of this Certificate, Continuation Sheet and FAA Approved Operation Manual Supplement dated October 12, 1990 or later FAA Approved revision required for non-fuel injected installation, FAA Approved Airplane Flight Manual (See continuation sheet 3 of 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:* March 14, 1989

*Date reissued:* January 19, 2007

*Date of issuance:* October 12, 1990

*Date amended:* January 19, 2007; May 1, 2008

*By direction of the Administrator*



Original signed by TLM

(Signature)

Tina L. Miller  
Program Manager  
Wichita Aircraft Certification Office

(Title)

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

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.

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**TRANSFER ENDORSEMENT**

Transfer the ownership of the Supplemental Type Certificate Number \_\_\_\_\_

to *(Name of transferee)* \_\_\_\_\_

*(Address of transfer)* \_\_\_\_\_  
*(Number and street)*

\_\_\_\_\_  
*(City, State, and Zip code)*

from *(Name of grantor)* *(Print or type)* \_\_\_\_\_

*(Address of grantor)* \_\_\_\_\_  
*(Number and street)*

\_\_\_\_\_  
*(City, State, and Zip code)*

Extent of Authority (if licensing agreement): \_\_\_\_\_

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Date of Transfer: \_\_\_\_\_

Signature of grantor *(In ink)*: \_\_\_\_\_

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

# Supplemental Type Certificate

## (Continuation Sheet)

*Number* SA4974NM

Date of Issuance: March 14, 1989

Date Amended: May 1, 2008

*Limitations and Conditions* (Continued):

Supplement dated May 1, 2008 and FAA Approved Radial Engines, Ltd. Instructions for Continued Airworthiness Report REL1007, Revision (IR), dated September 18, 2007 or later FAA Approved revision required for fuel injected installations

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.

The conditions and limitations of Type Certificate Data Sheet No. A-743 apply except where superseded by the following:

This Supplemental Type Certificate Addendum, which is part of STC SA4974NM, prescribes the conditions and limitations under which the product for which the STC was issued meets the airworthiness requirements of the Civil Air Regulations. A copy of this STC Addendum is required to be maintained as part of the permanent records for the modified aircraft.

SUPPLEMENTAL TYPE CERTIFICATE HOLDER: Radial Engines, Ltd.

I. Boeing Model 75 Series, 2 PO-CLB (Acrobatic Category – See Note 7 of TCDS A-743) as modified by STC SA4974NM

Engine:	Jacobs R-755-9, R-755A2, A2M, R-755B2, B2M carbureted or fuel injected	
Fuel:	Aviation Gasoline Grade 80 or higher fuel conforming to ASTM Specification D910 or equivalent required. Automotive gasoline is not approved for airplanes modified to this design	
Engine Limits:	Maximum Manifold Pressure	
	R-755-9 (225 hp)	24.5 in. Hg
	R-755-9 (245 hp)	26.3 in. Hg
	R-755B2 or B2M (275 hp)	26.5 in. Hg
	R-755A2 or A2M (300 hp)	28.0 in. Hg
	Maximum RPM	2200 RPM
	<i>NOTE: For R-755-9 do not operate at 2200 RPM for over 5 minutes</i>	
	Maximum Oil Pressure	90 psi
	Maximum Oil temperature	200°F (93°C)
	Maximum Cylinder Head Temperature	
	A2,A2M,B2,B2M	500°F (260°C)
	-9	550°F (287°C)

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# Supplemental Type Certificate

## (Continuation Sheet)

*Number* SA4974NM

Date of Issuance: March 14, 1989

Date Amended: May 1, 2008

*Limitations and Conditions* (Continued):

Propeller and Propeller Limits:

Hamilton Standard 2B20/6135-15 or -16	
Maximum propeller diameter	93"
Minimum propeller diameter	91 1/8"

Placards: The following placards must be installed in plain view in the front cockpit:

Solo From Rear Seat Only

Intentional Spins Prohibited Above 2950 lbs.

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