

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

Number SA2318NM

This Certificate issued to Northern Airframes, LLC.
20130 Birchwood Loop Spur Road
Chugiak, AK 99567

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 3 of the Civil Air Regulations.*

* Complete certification basis is specified in Aircraft Specification No. 1A2, Revision 34

Original Product Type Certificate Number: 1A2
Make: Piper
Model: PA-18, PA-18A, PA-18 "125" (Army L-21A),
PA-18 "135" (Army L-21B), PA-18A "135",
PA-19 " (Army L-18C), PA-18 "150",
PA-18A "150"

Description of Type Design Change: Fabrication of North River Aviation Model 8400 brake booster assemblies, and modification of Scott Aviation Model B-711 brake master cylinders by installation of said assemblies, both in accordance with North River Aviation, Inc., Drawing List No. 84-100, Revised April 17, 1993, or later FAA approved revision.

Limitations and Conditions: The approval of this change in type design applies to the basic Piper PA-18, PA-18A, PA-18 "125" (Army L-21A), PA-18 "135" (Army L-21B), PA-18A "135", PA19 (Army L-18C), PA-18 "150", and PA-18A "150" airplanes that have been equipped with FAA approved high-pressure brake lines, and with brakes FAA approved for a maximum available hydraulic pressure of at least 1698 PSI, only.

(See Continuation of Limitations and Conditions on Page 3 of 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: March 08, 1985

Date reissued: July 19, 2004; January 26, 2006;
January 16, 2008

Date of issuance: August 14, 1985

Date amended: June 29, 1990, July 19, 2004;
January 26, 2006



By direction of the Administrator

Gregory J. Holt
(Signature)

Gregory J. Holt
Manager
Anchorage 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.

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

Number SA2318NM

Date reissued: July 19, 2004; January 26, 2006;
January 16, 2008

Date amended: June 29, 1990, July 19, 2004;
January 26, 2006

Limitations and Conditions (Continued)

This approval should not be extended to other aircraft of these models on which other previously approved modifications are incorporated, unless it is determined by the installer that the modification will introduce no adverse effect on the airworthiness of such aircraft. FAA approved high-pressure brake lines, under the meaning of this Certificate, are brake lines which the FAA has found to be sufficiently flexible for their intended purpose, compatible with MIL-H-5606BB (red) hydraulic fluid, and capable of sustaining an ultimate internal hydraulic pressure of at least 2547 PSI for at least 3 seconds without failure or leakage; and which the FAA has approved for installation on the airplane. The modification approved by this Certificate is also eligible on Piper PA-18S, PA-18S "125", PA-18AS "125", PA-18S "135", PA-18AS "135", PA-19S, PA-18S "150", and PA-18AS "150" airplanes that have been converted to landplanes in accordance with FAA approved data.

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.

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

Number SA4629NM

This Certificate issued to Northern Airframes, LLC.
20130 Birchwood Loop Spur Road
Chugiak, AK 99567

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.*

* Complete certification basis is specified in Aircraft Specification No. A-691, Revision 31

Original Product Type Certificate Number: A-691
Make: Piper
Model: J3C-40, J3C-50, J3C-65 (Army L-4, L-48, L-4H, L-4J; Navy NE-1, NE-2), PA-11

Description of Type Design Change: Fabrication of North River Aviation Model 8400 brake booster assemblies, and modification of Scott Aviation Model B-711 brake master cylinders by installation of said assemblies, both in accordance with North River Aviation, Inc., Drawing List No. 84-100, revised April 17, 1993, or later FAA approved revision.

Limitations and Conditions: The approval of this change in type design applies to the basic Piper J3C-40, J3C-50, J3C-65 (Army L-4, L-48, L-4H, L-4J; Navy NE-1, NE-2), PA-11 airplanes that have been equipped with Scott Aviation Model B-711 brake master cylinders, FAA approved high-pressure brake lines, and with brakes FAA approved for a maximum available hydraulic pressure of at least 1698 PSI, only.

(See Continuation of Limitations and Conditions on Page 3 of 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: March 20, 1985

Date reissued: July 19, 2004; January 26, 2006;
January 16, 2008

Date of issuance: June 29, 1990

Date amended: July 19, 2004; January 26, 2006



By direction of the Administrator

Gregory J. Holt
(Signature)

Gregory J. Holt
Manager
Anchorage 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.

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

Number SA4629NM

Date reissued: July 19, 2004; January 26, 2006;
January 16, 2008

Date amended: July 19, 2004; January 26, 2006

Limitations and Conditions (Continued)

This approval should not be extended to other aircraft of these models on which other previously approved modifications are incorporated, unless it is determined by the installer that the modification will introduce no adverse effect on the airworthiness of such aircraft. FAA approved high-pressure brake lines, under the meaning of this Certificate, are brake lines which the FAA has found to be sufficiently flexible for their intended purpose, compatible with MIL-H-5606BB (red) hydraulic fluid, and capable of sustaining an ultimate internal hydraulic pressure of at least 2547 PSI for at least 3 seconds without failure or leakage; and which the FAA has approved for installation on the airplane. The modification approved by this Certificate is also eligible on Piper J3C-50S, J3C-65S, AND pa-11S airplanes that have been converted to landplanes in accordance with FAA approved data.

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.

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

Number SA3633NM

This Certificate issued to Northern Airframes, LLC.
20130 Birchwood Loop Spur Road
Chugiak, AK 99567

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 3 of the Civil Air Regulations.

Original Product Type Certificate Number: 780
Make: Piper
Model: PA-12

Description of Type Design Change: Fabrication of North River Aviation Model 8400 brake booster assemblies, and modification of Scott Aviation Model B-711 brake master cylinders by installation of said assemblies, both in accordance with North River Aviation, Inc., Drawing List No. 84-100, revised August 1, 2004, or later FAA approved revision.

Limitations and Conditions: The approval of this change in type design applies to the basic Piper PA-12 airplanes that have been equipped with FAA approved high-pressure brake lines, and with brakes FAA approved for a maximum available hydraulic pressure of at least 1698 PSI, only. This approval should not be extended to other aircraft of these models on which other previously approved modifications are incorporated, unless it is determined by the installer that the modification will introduce no adverse effect on the airworthiness of such aircraft.

(See Continuation of Limitations and Conditions on Page 3 of 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: January 08, 1987

Date reissued: July 19, 2004; January 26, 2006;
January 16, 2008; June 24, 2008

Date of issuance: August 5, 1987

Date amended: July 19, 2004; January 26, 2006



By direction of the Administrator

Gregory J. Holt

(Signature)

Gregory J. Holt
Manager
Anchorage Aircraft Certification Office

(Title)

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

Number SA3633NM

Date reissued: July 19, 2004; January 26, 2006;
January 16, 2008; June 24, 2008

Date amended: July 19, 2004; January 26, 2006

Limitations and Conditions (Continued)

FAA approved high-pressure brake lines, under the meaning of this Certificate, are brake lines which the FAA has found to be sufficiently flexible for their intended purpose, compatible with MIL-H-5606BB (red) hydraulic fluid, and capable of sustaining an ultimate internal hydraulic pressure of at least 2547 PSI for at least 3 seconds without failure or leakage; and which the FAA has approved for installation on the airplane. The modification approved by this Certificate is also eligible on Piper PA-12 airplanes formerly configured as seaplanes, in accordance with FAA approved data.

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.

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

Number SA3634NM

This Certificate issued to Northern Airframes, LLC.
20130 Birchwood Loop Spur Road
Chugiak, AK 99567

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 3 of the Civil Air Regulations.

Original Product Type Certificate Number: 797
Make: Piper
Model: PA-14

Description of Type Design Change: Fabrication of North River Aviation Model 8400 brake booster assemblies, and modification of Scott Aviation Model B-711 brake master cylinders by installation of said assemblies, both in accordance with North River Aviation, Inc., Drawing List No. 84-100, revised August 1, 2004, or later FAA approved revision.

Limitations and Conditions: The approval of this change in type design applies to the basic Piper PA-14 airplanes that have been equipped with FAA approved high-pressure brake lines, and with brakes FAA approved for a maximum available hydraulic pressure of at least 1698 PSI, only. This approval should not be extended to other aircraft of these models on which other previously approved modifications are incorporated, unless it is determined by the installer that the modification will introduce no adverse effect on the airworthiness of such aircraft.

(See Continuation of Limitations and Conditions on Page 3 of 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: January 08, 1987

Date reissued: July 19, 2004; January 26, 2006;
January 16, 2008; June 24, 2008

Date of issuance: August 5, 1987

Date amended: July 19, 2004; January 26, 2006



By direction of the Administrator

Gregory J. Holt

(Signature)

Gregory J. Holt
Manager
Anchorage 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.

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

Number SA3634NM

Date reissued: July 19, 2004; January 26, 2006;
January 16, 2008; June 24, 2008

Date amended: July 19, 2004; January 26, 2006

Limitations and Conditions (Continued)

FAA approved high-pressure brake lines, under the meaning of this Certificate, are brake lines which the FAA has found to be sufficiently flexible for their intended purpose, compatible with MIL-H-5606BB (red) hydraulic fluid, and capable of sustaining an ultimate internal hydraulic pressure of at least 2547 PSI for at least 3 seconds without failure or leakage; and which the FAA has approved for installation on the airplane. The modification approved by this Certificate is also eligible on Piper PA-14 airplanes formerly configured as seaplanes, in accordance with FAA approved data.

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.

-- END --

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

Number SA4653NM

This Certificate issued to Northern Airframes, LLC.
20130 Birchwood Loop Spur Road
Chugiak, AK 99567

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 3 of the Civil Air Regulations.*

* Complete certification basis is specified in Aircraft Specification No. 1A6, Revision 31

Original Product Type Certificate Number: 1A6
Make: Piper
Model: PA-22 "150", PA-22 "160", PA-22 "108"

Description of Type Design Change: Fabrication of North River Aviation Model 8400 brake booster assemblies, and modification of Scott Aviation Model B-711 brake master cylinders by installation of said assemblies, both in accordance with North River Aviation, Inc., Drawing List No. 84-100, Revised April 17, 1993, or later FAA approved revision.

Limitations and Conditions: The approval of this change in type design applies to the basic Piper PA-22 "150" and PA-22 "160" airplanes, Serial Numbers 22-3218 and 22-3387 through 22-7630, and to the basic Piper PA-22 "108" airplanes, Serial Numbers 22-8000 through 22-9848, that have been equipped with FAA approved high-pressure brake lines, and with brakes FAA approved for a maximum available hydraulic pressure of at least 1698 PSI, only.

(See Continuation of Limitations and Conditions on Page 3 of 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: March 20, 1985

Date reissued: July 19, 2004; January 26, 2006
January 16, 2008

Date of issuance: November 20, 1991

Date amended: July 19, 2004; January 26, 2006



By direction of the Administrator

Gregory J. Holt

(signature)

Gregory J. Holt
Manager
Anchorage 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.

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

Number SA4653NM

Date reissued: July 19, 2004; January 26, 2006;
January 16, 2008

Date amended: July 19, 2004; January 26, 2006

Limitations and Conditions (Continued)

This approval should not be extended to other aircraft of these models on which other previously approved modifications are incorporated, unless it is determined by the installer that the modification will introduce no adverse effect on the airworthiness of such aircraft. FAA approved high-pressure brake lines, under the meaning of this Certificate, are brake lines which the FAA has found to be sufficiently flexible for their intended purpose, compatible with MIL-H-5606BB (red) hydraulic fluid, and capable of sustaining an ultimate internal hydraulic pressure of at least 2547 PSI for at least 3 seconds without failure or leakage; and which the FAA has approved for installation on the airplane. The modification approved by this Certificate is also eligible on Piper PA-22S "150" and PA-22S "160" airplanes that have been converted to landplanes in accordance with FAA approved data.

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.

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

Number SA3635NM

This Certificate issued to Northern Airframes, LLC.
20130 Birchwood Loop Spur Road
Chugiak, AK 99567

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 3 of the Civil Air Regulations.

Original Product Type Certificate Number: 725
Make: Piper
Model: J5C

Description of Type Design Change: Fabrication of North River Aviation Model 8400 brake booster assemblies, and modification of Scott Aviation Model B-711 brake master cylinders by installation of said assemblies, both in accordance with North River Aviation, Inc., Drawing List No. 84-100, revised August 1, 2004, or later FAA approved revision.

Limitations and Conditions: The approval of this change in type design applies to the basic Piper J5C airplanes that have been equipped with FAA approved high-pressure brake lines, and with brakes FAA approved for a maximum available hydraulic pressure of at least 1698 PSI, only. This approval should not be extended to other aircraft of these models on which other previously approved modifications are incorporated, unless it is determined by the installer that the modification will introduce no adverse effect on the airworthiness of such aircraft.

(See Continuation of Limitations and Conditions on Page 3 of 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: January 08, 1987

Date reissued: July 19, 2004; January 26, 2006;
January 16, 2008; June 24, 2008

Date of issuance: August 5, 1987

Date amended: July 19, 2004; January 26, 2006



By direction of the Administrator

Gregory J. Holt

(Signature)

Gregory J. Holt
Manager
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United States Of America
Department of Transportation - Federal Aviation Administration
Supplemental Type Certificate
(Continuation Sheet)

Number SA3635NM

Date reissued: July 19, 2004; January 26, 2006;
January 16, 2008; June 24, 2008

Date amended: July 19, 2004; January 26, 2006

Limitations and Conditions (Continued)

FAA approved high-pressure brake lines, under the meaning of this Certificate, are brake lines which the FAA has found to be sufficiently flexible for their intended purpose, compatible with MIL-H-5606BB (red) hydraulic fluid, and capable of sustaining an ultimate internal hydraulic pressure of at least 2547 PSI for at least 3 seconds without failure or leakage; and which the FAA has approved for installation on the airplane. The modification approved by this Certificate is also eligible on Piper J5C airplanes formerly configured as seaplanes, in accordance with FAA approved data.

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.

-- END --