AIRCRAFT WHEEL & BRAKE DIVISION

PARKER HANNIFIN CORPORATION

AVON, OHIO

PARTS LIST

*199-88 CONVERSION KIT

BEECH MODEL 50 - TWIN BONANZA AIRCRAFT
CONVERTED BY EXCALIBUR AVIATION: SPECIFIC MODELS "EXCALIBUR"
AND "EXCALIBUR 800"

PART NUMBER	DESCRIPTION	QUANTITY
30-99	Brake Assembly	2
40-134A	Wheel Assembly	2
104-00200	Fitting (AN815-4D)	2
101-00700	O-Ring (AN6227-7)	2
103-21300	Bolt (AN5-7A)	24
095-10500	Washer (AN960-516)	24
094-10400	Nut (AN365-524)	24
50-59	Installation Drawing	1
SA390GL	Supplemental Type Certificate	1
	Brake Lining Conditioning Procedure	1

THIS KIT WILL CONVERT ONE AIRCRAFT TO CLEVELAND WHEELS AND BRAKES.

NOTE: USE MIL-H-5606 BRAKE FLUID (RED OIL).

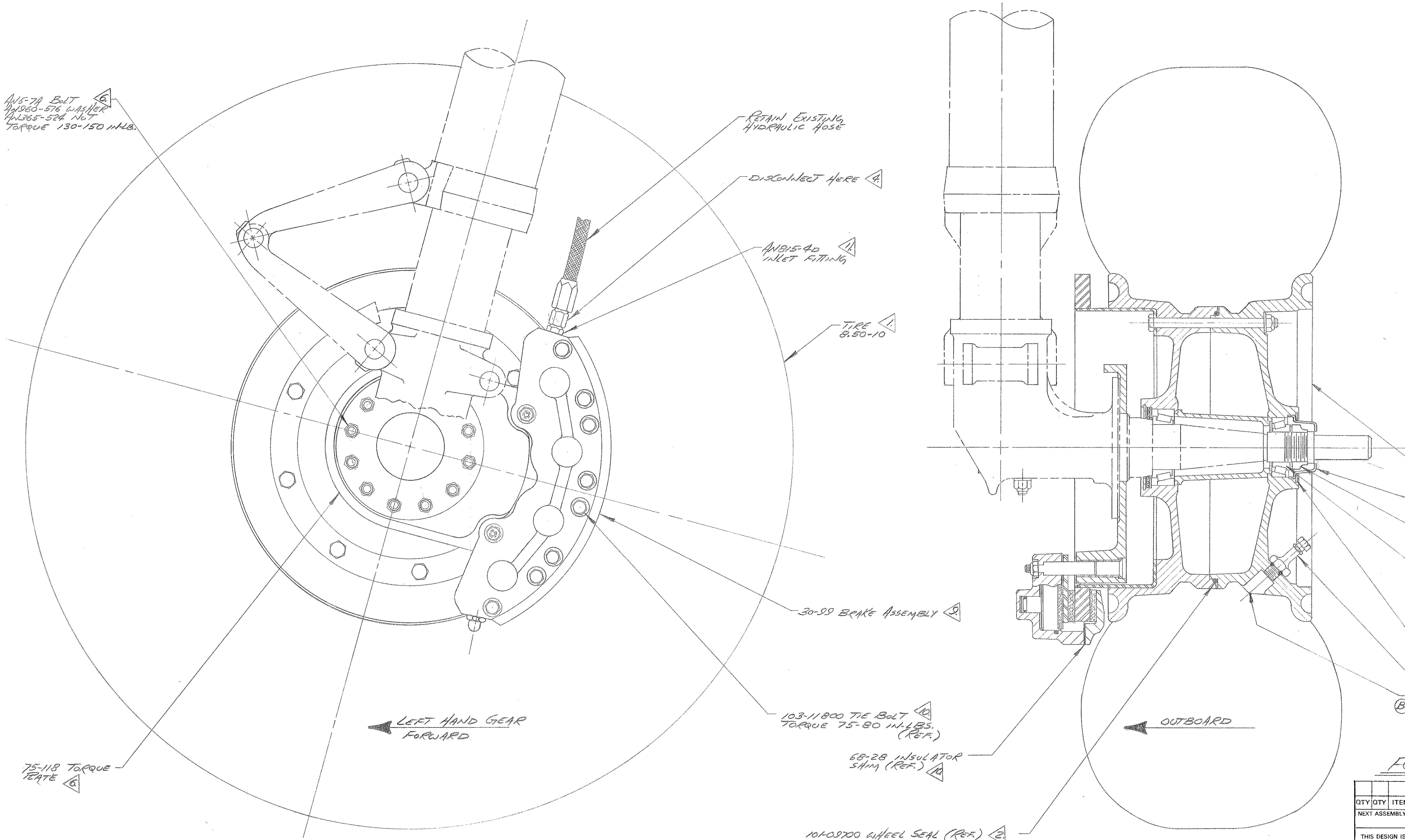
*THIS KIT APPLIES ONLY TO BEECH MODEL 50 AIRCRAFT CONVERTED BY EXCALIBUR AVIATION TO THE FOLLOWING SPECIFIC MODELS: "EXCALIBUR" AND "EXCALIBUR 800."

199-88
01-08-80

DO NOT SCALE

50-59 | B

CHANGE NOTICE	LETTER	DESCRIPTION OF CHANGE	CHG. BY	DATE	CHK'D. BY
267/81	A	WAS 6.0	RS	3/11/81	
0314/64	B	ADDED NOTE, SEE C/N	VR	7/22/15	



INSTRUCTIONS

1. KIT 199-88 APPLIES ONLY TO EXCALIBUR AND EXCALIBUR 800 CONVERSIONS OF THE BEECHCRAFT TWIN BONANZA. TIRES USED ARE TUBELESS OR TUBE TYPE 8.50-10 TYPE III, 6 OR 8 PLY
2. MOUNT TIRES ON WHEELS AND INFLATE PER MANUAL. WHEEL ASSEMBLY 40-134A INCLUDES TUBELESS VALVE AND WHEEL SEAL. TO MOUNT TUBE TYPE TIRE REMOVE VALVE AND WHEEL SEAL.
3. JACK UP AIRCRAFT PER MANUAL. REMOVE AND DISCARD EXISTING MAIN GEAR WHEELS. RETAIN AXLE NUT AND WASHER.
4. DISCONNECT HYDRAULIC HOSE FROM BRAKE INLET FITTING AND CAP TIGHTLY.
5. REMOVE AND DISCARD EXISTING BRAKES, AND MOUNTING HARDWARE.
6. INSTALL TORQUE PLATE 75-118, POSITION AS SHOWN. TORQUE MOUNTING BOLTS 130-150 IN-LBS.
7. REMOVE 155-6 SNAP RING, 139-58 HUBCAP ASS'Y. AND 07100 OUTER BEARING CONE FROM 40-134A WHEEL ASSEMBLY AND STORE ON A CLEAN SURFACE.
8. INSTALL WHEEL ASSEMBLY ON AXLE. INSTALL OUTER BEARING CONE, WASHER AND AXLE NUT. WHILE ROTATING WHEEL, TORQUE AXLE NUT TO 40 IN-LBS., THEN BACK OFF TO ZERO. TORQUE NUT TO 20 IN-LBS. THEN CONTINUE TIGHTENING UNTIL A SLOT LINES UP WITH HOLE THROUGH AXLE. INSTALL AN 380-5-5 COTTER PIN. INSTALL HUBCAP IN WHEEL WITH SNAP RING.
9. LOOSEN 8 TIE BOLTS ON 30-99 BRAKE ASSEMBLY AND REMOVE ALL 4 BACK PLATES. SLIDE NEW BRAKE IN THE 2 MOUNTING HOLES IN TORQUE PLATE.
10. POSITION INSULATOR SHIM 68-28 OVER ALL 8 TIE BOLTS, THEN POSITION THE 4 BACK PLATES BETWEEN BRAKE DISC AND WHEEL FLANGE AS SHOWN. ALIGN BACK PLATES WITH BOLTS AND TORQUE BOLTS 75-80 IN-LBS.
11. CONNECT HYDRAULIC HOSE TO AN 815-4D INLET FITTING AS SHOWN. CHECK RESEVOIR FLUID LEVEL AND BLEED SYSTEM.
12. DEPRESS AND RELEASE BRAKE PEDALS SEVERAL TIMES. ROTATE WHEELS BY HAND, CHECKING FOR BRAKE DRAG. A SLIGHT AMOUNT OF DRAG IS NORMAL; HOWEVER, A TIGHTLY BOUND UP SYSTEM SHOULD BE INVESTIGATED AND CORRECTED. EXCESS DRAG CAN BE CAUSED BY AN IMPROPERLY SEATED LINING
13. REMOVE AIRCRAFT FROM JACKS AND CONDITION LININGS PER THE ENCLOSED INSTRUCTION SHEET.
14. WEIGHT AND BALANCE:

    40-134A WHEEL ASSEMBLY WEIGHS 19.6 LBS.
    30-99 BRAKE ASSEMBLY WEIGHS 6.36 LBS. (A)

    WEIGH ORIGINAL WHEELS AND BRAKE AND REVISE WEIGHT AND BALANCE DATA IN THE LOG BOOK.

(B) NOTE: FOR TUBE-TYPE TIRE USAGE, DRILL VALVE HOLE THRU AT Ø.625 PRIME AND PAINT MACHINED SURFACES WITH ONE COAT ZINC CHROMATE PRIMER AND ONE COAT ALUMINUM (COLOR) POLYURETHANE

FOR USE WITH MIL-H-5606 BRAKE FLUID

QTY	QTY	ITEM	PART NO.	DESCRIPTION	MATERIAL & SPEC.	HEAT TREAT & SPEC.	FINISH & SPEC.	WGT.

NEXT ASSEMBLY	QTY	FINAL ASSEMBLY	QTY	PATTERN, CASTING OR BLANK NO.	DRAWN BY 12-21-79 R. S.	
THIS DESIGN IS THE PROPERTY OF CLEVELAND WHEELS & BRAKES AND IS NOT TO BE COPIED, DUPLICATED, OR USED AS THE BASIS FOR MANUFACTURE OR SALE OF EQUIPMENT WITHOUT WRITTEN PERMISSION.		ZYGLO PER MIL-I-6866 STAMP M ON PART		WORK TO DIMENSIONS — DO NOT SCALE TOLERANCE FOR .XXX ± .010 TOLERANCE FOR .XX ± .030 TOLERANCE FOR ANGULAR DIMS. ± 1/2° TOLERANCE FOR FRACTIONAL DIMS. ± .030	CHECKED BY	**Cleveland Wheels & Brakes** 1160 Avon Center Road, Avon, Ohio 44011 a division of VanSickle Industries, Inc. "the brake people"
		MAGNAFLUX PER MIL-I-6868 STAMP P ON PART			SCALE 1/2 SIZE	
		MACHINED SURFACES PER MIL STD 10 UNLESS OTHERWISE NOTED		BREAK SHARP EDGES .010 UNLESS NOTED. REMOVE ALL BURRS BEFORE PLATING. DRILL PER INSP. PROCEDURE NO. 114.	NAME INSTALLATION OF KIT 199-88 TWIN BONANZA	50-59
		UNLESS NOTED ALL THREADS PER MIL-S-7742				

050-05900

Cleveland
Wheels & Brakes

Parker Hannifin Corporation
Aircraft Wheel & Brake
1160 Center Road
Avon, Ohio 44011 USA
1-800-BRAKING (272-5464)
216-937-1272 ● FAX 216-937-5409

PRODUCT REFERENCE MEMO

METALLIC BRAKE LINING CONDITIONING PROCEDURE

The brake lining material used in this brake assembly is an iron based metallic composition. This material must be properly conditioned (glazed) in order to provide optimum service life.

Dynamometer tests have shown that at low braking energies, unglazed linings experience greater wear and the brake discs can become severely scored.

Conditioning may be accomplished as follows:

1. Perform two (2) consecutive full stop braking applications from 30 to 35 kts. Do not allow the brake discs to cool substantially between stops.

2. On aircraft with tail wheels, exercise caution during stopping to prevent tail lifting. Due to the efficiency of these brakes, extremely hard braking could result in lifting the tail from the ground.

This conditioning procedure will wear off high spots and generate sufficient heat to glaze the linings. Once the linings are glazed, the braking system will provide many hours of maintenance free service.

Visual inspection of the brake disc will indicate the lining condition. A smooth surface, without grooves, indicates the linings are properly glazed. If the disc is rough (grooved), the linings must be reglazed. The conditioning procedure should be performed whenever the rough disc condition is evident.

Light use, such as in taxiing, will cause the glaze to be worn rapidly.

Use caution in performing this procedure, as higher speeds with successive stops could cause the brakes to overheat resulting in warped discs and/or pressure plates.

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PRODUCT REFERENCE MEMO

AVAILABILITY OF GENERAL MAINTENANCE INFORMATION AND TORQUING PROCEDURES

EFFECTIVITY: All Parker Hannifin (Cleveland Wheels & Brakes) External Disc Design wheel & brake assemblies.

APPLICABILITY: Aircraft converted per STC approved kits to use Cleveland External Disc Design wheel & brake assemblies.

REASON: This PRM is issued to inform Wheel & Brake Conversion Kit users and installers that information regarding general maintenance and proper bolt / nut torquing procedures is available. This information is contained in the Cleveland Wheels & Brakes Component Maintenance Manual (CMM) and in the Cleveland Technicians Service Guide, PRM64. Most Cleveland Conversion Kits were designed prior to creation of the CMM. Parker Hannifin is in process of upgrading kit paperwork to include a requirement to use the CMM and PRM64 as wheel & brake service information. This PRM serves the same purpose for kits whose paperwork has not yet been upgraded.

DESCRIPTION: The Cleveland Wheels & Brakes Component Maintenance Manual and PRM64, Technician's Service Guide shall be used as service information when performing general maintenance on Cleveland External Disc Design wheels & brakes. Particular attention should be paid to instructions regarding wheel bolt torquing procedures.

NOTE: Refer to the CMM or PRM64 to determine the required torque procedure (Dry or Lubtork). While using the required torque procedure, observe the torque required to turn the nut (free running torque). This value must be added to the value stated on the casting or nameplate (or in the CMM or PRM64) to obtain a true torque value. Proper torque is imperative to prevent premature bolt or mating component failure.

COMPLIANCE: Highly Recommended.

APPROVAL: The engineering contents of this Product Reference Memo are FAA DER approved.

WEIGHT & BALANCE: Not applicable.

PUBLICATIONS: Cleveland Wheels & Brakes Component Maintenance Manual and PRM64 are available from:

Customer Support
Parker Hannifin Corporation
Aircraft Wheel & Brake
1160 Center Road
Avon, Ohio

Phone: 1-800- BRAKING (272-5464)
FAX: 216-937-5409

Parker Hannifin Corporation
Aerospace/Aircraft Wheel & Brake
1160 Center Road
Avon, OH 44011

Date: _ _/_ _/20_ _

Subject: Letter of Authorization for Installation of STC'd Conversion Kits

To whom it may concern:

Parker Hannifin Corporation, Aircraft Wheel & Brake Division, hereby states that the following item(s):

KIT NUMBER: 199-_____

FAA APPROVAL: 1) STC # _____

NO OTHER APPROVALS NECESSARY

AUTHORIZATION TO INSTALL: With the sale of this STC KIT, OWNER of the Supplemental Type Certificate agrees to permit the buyer or buyer's agent or agency to use the certificate to alter the product under the terms and conditions of this STC.

A/C MAKE: _____

A/C MODEL_____

TAIL # _____

Regards,

Technical Support Team
Technical Hotline (800) 272-5464
Clevelandwbhelp@parker.com
Web-site: www.clevelandwheelandbrake.com
Manufacturer of Cleveland Wheels & Brakes

United States of America

Department of Transportation — Federal Aviation Administration

Supplemental Type Certificate

Number SA390GL

This certificate, issued to Parker Hannifin Corporation
Aircraft Wheel & Brake Division
1160 Center Road
Avon, Ohio 44011

certifies that the change in the type design for the following product with the limitations and conditions thereof as specified hereon meets the airworthiness requirements of Part 3 *of the* Civil Air *Regulations.* See Type Certificate Data Sheet 5A4 for complete certification basis.

Original Product — Type Certificate Number 5A4
Make Beech
Model 50, B50, C50, D50, D50A, D50B, D50C, D50E, E50, F50, G50, H50, and J50

Description of Type Design Change

Install Aircraft Wheel and Brake Conversion Kit P/N 199-88, no rev. dated January 8, 1980, in accordance with Cleveland Wheels and Brakes Installation Drawing 50-59, no rev., dated December 21, 1979, or later FAA approved revisions of Kit 199-88 and installation drawing 50-59.

Limitations and Conditions

This STC applies only to the above models which have been modified by STC SA75SW. Compatibility of this modification with other previously approved modifications must be determined by the installer.

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 9, 1980 *Date reissued*

Date of issuance June 18, 1980 *Date amended* March 25, 1985

By direction of the Administrator

W. F. Horn *(Signature)*
Manager, Chicago Aircraft Certification Office
Central Region, ACE-115C
(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

FAA Form 8110-2 (10-68)