

INSTALLATION MANUAL

ISSUE DATE 05/09/97

APPLICABLE MODELS

PA-34-200

PA34-200T

PA34-220T



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JUL 14 1997
John ACR-116
 CHICAGO AIRCRAFT
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			<u>REVISIONS</u>
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TABLE OF CONTENTS

<u>SECTION No.</u>		<u>PAGE No.</u>
SECTION 1.0	LEFT AND RIGHT FLAP SEALS	1
1.1	LIF- LEFT INBOARD SEAL LOCATION AND DRILLING	1
1.2	OF OUTBOARD FLAP SEAL LOCATION AND DRILLING	1
1.3	LOF OUTBOARD FLAP SEAL LOCATION AND DRILLING	1
1.4	ENLARGING HOLES	1
1.5	FINAL CLEANUP	2
1.6	RIVETING SEALS IN PLACE	2
1.7	RECONNECTING FLAP AND FINAL ALIGNMENT	2
1.8	RIGHT SIDE INSTALLATION	2
1.9	PAPERWORK AND LOGBOOK ENTRY	2
SECTION 3.0	PARTS LIST	2
SECTION 4.0	FLAP/FUSELAGE SEALS	3
	DETAIL #1	4
SECTION 5.0	MAINTENANCE MANUAL	5
	SUPPLEMENTAL TYPE CERTIFICATE	6

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NOTES: PRELIMINARY INSTALLATION OF THE SEALS CAN BE DONE AND THEN THE SEALS CAN BE PAINTED BEFORE FINAL INSTALLATION. IF FLAP HINGE FAIRINGS ARE TO BE INSTALLED SOME LABOR SAVINGS CAN BE REALIZED BY INSTALLING THEM BEFORE INSTALLATION OF THE FLAP SEALS.

SECTION 1.0 LEFT AND RIGHT FLAP GAP SEALS

1.1 LIF- LEFT INBOARD SEAL LOCATION AND DRILLING

Lower the flaps fully. At the inboard end of the left flap remove the clevis bolt and spacer from the flap actuating rod terminal end, retain the clevis bolt and spacer for reinstallation. The flap will now swing down and allow space to install the gap seals. Starting at the inboard edge of the flap (see detail #1), position the left inboard gap seal P/N LIF with the 5/8" leg flush against the rear spar. (Do not permit the seal to overlap the doubler on the spar) Position the bottom of the seal flush with the bottom wing skin and the inboard tab butted against the fuselage. Check for existing rivets which prevent the seal from laying flush against the spar. Drill clearance holes in the seal flange to allow seal to clear. At the point where the tab butts against the fuselage there may be 2 rivets in the fuselage which can be removed and the holes used to rivet the tab to the fuselage. If on this model the rivets are not there or do not allow enough edge distance new holes must be drilled in the tab and fuselage. Using the two pilot holes in the seal drill two #40 holes in the spar. Temporarily mount seal with TRA 4X1/4 screws. Raise flap full up by hand and check for good positive pressure of seal against flap. Adjust as needed. On some models there may be two rivets in the flap that interfere with the trailing edge of the gap seal. In these cases use a duckbill pliers and bend the trailing edge of the gap seal down in these areas until clearance is achieved.

1.2 OF OUTBOARD FLAP SEAL LOCATION AND DRILLING.

Position the outboard flap seal P/N OF next to the inboard flap seal with a 1/8" space between. (See detail #1). Position bottom of seal flush with bottom of wing. Using pilot holes in seal as a guide drill two holes in spar and cleco seal in place. Check for existing rivets which prevent the seal from laying flush against the spar. Drill clearance holes in the seal flange to allow seal to clear. Using pilot holes in seal as a template drill all remaining holes to a # 40 hole size, cleco as you go. Do the same for the next seal P/N OF.

1.3 LOF LEFT OUTBOARD FLAP SEAL LOCATION AND DRILLING.

Position the outboard flap seal P/N LOF next to P/N OF with a 1/8" space between. (See detail #1). Position bottom of seal flush with bottom of wing. Using pilot holes in seal as a guide drill two holes in spar and cleco seal in place. Check for existing rivets which prevent the seal from laying flush against the spar. Drill clearance holes in the seal flange to allow seal to clear. Using pilot holes in seal as a template drill all remaining holes to a # 40 hole size, cleco as you go.

1.4 ENLARGING HOLES.

Remove gap seals and enlarge all holes in airframe and gap seals to a #27 hole size. ✓ F A A

1.5 FINAL CLEANUP.

Clean shavings from aircraft and deburr all holes in airframe and gap seals. Corrosion proof with alodine or equivalent. The gap seals may be painted at this time. When painting seals the teflon portion of the seals should be protected from overspray or solvents!

1.6 RIVETING SEALS IN PLACE.

Attach seals using CR3243-4-2 Cherrymax rivets, or equivalent.

1.7 RECONNECTING FLAP AND FINAL ALIGNMENT.

Reinstall clevis bolt and spacer in flap actuating rod terminal end. Check for straight alignment of seals and for good contact against flap at trailing edge of seal. Adjust as needed. Run flap full up and down to inspect for interference with gap seals.

1.8 RIGHT SIDE INSTALLATION.

Repeat steps 1.1 thru 1.7 on the right flap.

1.9 PAPERWORK AND LOGBOOK ENTRY

Perform all paperwork and logbook entries.

Component weights:

Flap Seals	37.5 oz.
Arm	127"

SECTION 2 PARTS LIST

<u>P/N</u>	<u>QTY</u>	<u>DESCRIPTION</u>
OF	4	OUTBOARD FLAP SEAL
LOF	1	LEFT OUTBOARD FLAP SEAL
ROF	1	RIGHT OUTBOARD FLAP SEAL
RIF	1	RIGHT INBOARD FLAP SEAL
LIF	1	LEFT INBOARD FLAP SEAL

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SECTION 4.0 FLAP/FUSELAGE SEALS

4.1 LFF- LEFT FLAP/FUSELAGE SEAL INSTALATION

With flaps full up (see detail #1) place P/N LFF left flap/fusealge seal on top of the inboard edge of the flap against the fuselage so that the seal covers the flap end space. Position so that the forward end of the curved portion is even with the trailing edge of the flap, and for solid contact with flap surface. On some models the trailing edge of the flange may hang below the edge of the fuselage. Mark the seal at the point where it overhangs and trim flush with bottom of the fuselage. Mark three hole locations, one at each end of the seal and one in the center of the seal flange, which will not interfere with the existing fuselage hardware. Drill #40 pilot holes at these locations and temporarily hold seal in place use TRA 4X1/4 screws. Lower and raise flap to assure that the seal contacts the flap properly and is not binding. Enlarge holes to a #27 drill size. Remove seal, clean shavings and corosion proof with alodine or equivalent. Seal may be painted before instalation on aircraft. Rivet seal in place using three P/N CR3243-4-2 roundhead cherrymax rivets.

4.2 RIGHT SIDE INSTALTION

Repeat step 4.1 on the right side

4.3 PARTS LIST

PART NUMBER	NO REQ.	DESCRIPTION
LFF	1	LEFT FLAP/FUSELAGE SEAL
RFF	1	RIGHT FLAP/FUSELAGE
CR3243-4-2	6	ROUNDHEAD CHERRY MAX RIVET

4.4 PAPERWORK AND LOGBOOK ENTRY

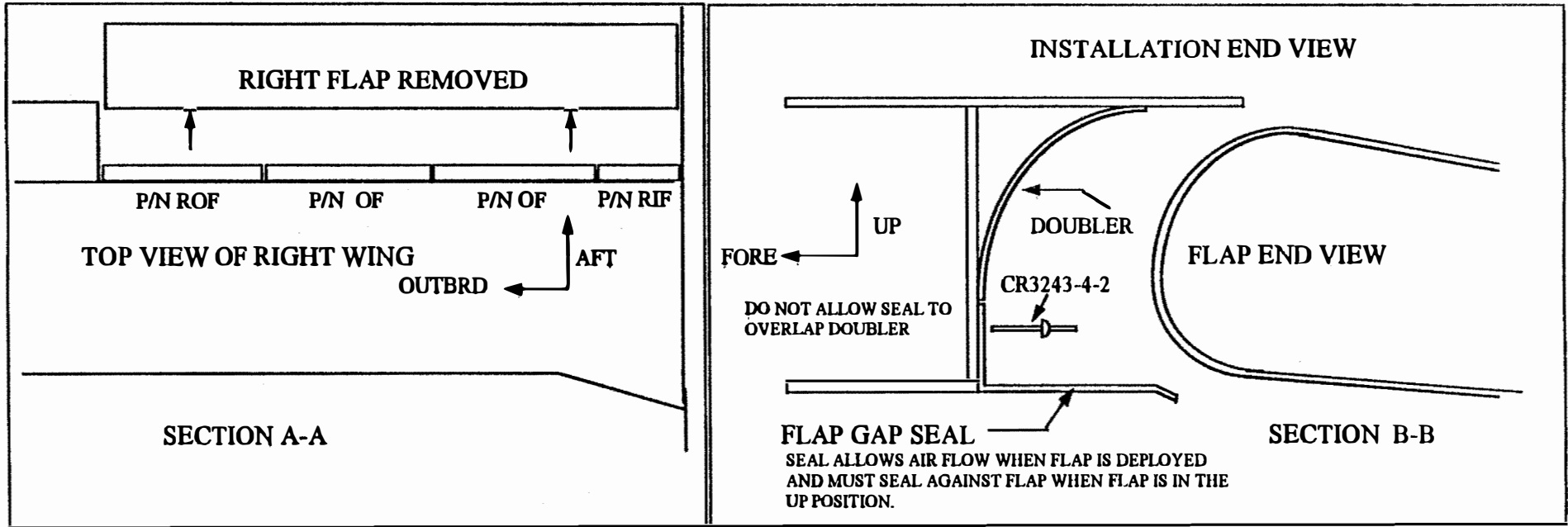
Perform paprework and logbook entry.

Component weights including hardware.....3 oz
 Arm.....136 inches

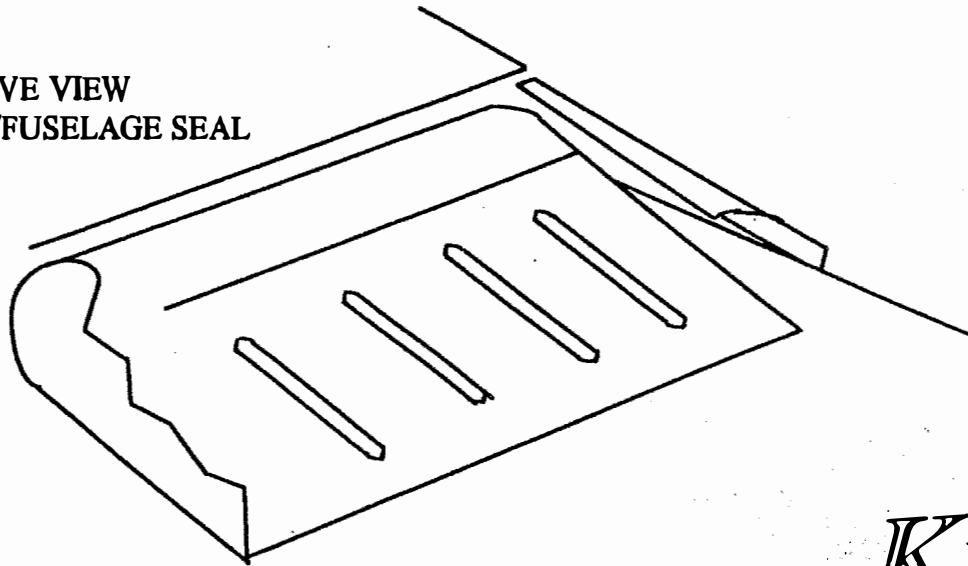

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PA-34 FLAP SEAL INSTALLATION

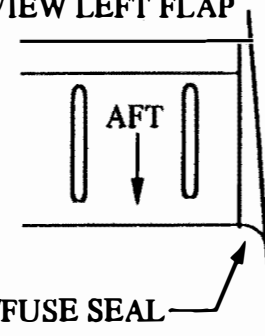
DETAIL # 1



PERSPECTIVE VIEW
LEFT FLAP/FUSELAGE SEAL



TOP VIEW LEFT FLAP



FLAP/FUSE SEAL
P/N LFF

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PAGE 4

SECTION 5- GAP SEAL MAINTENANCE MANUAL.**PART A. INSPECTION.**

1. Inspect daily at preflight to ensure there is no bending of the controls, bent gap seals, abrading of rivets or control surfaces, or broken parts.
2. When aircraft has been stored outside during snow or freezing conditions, a careful inspection should be made of the areas behind and under the seals for ice accumulations. If ice is found, which cannot be removed with careful brushing with seal held slightly away from control surface, the aircraft should be de-iced or defrosted.
3. 100 hour inspections are suggested to check for abrading of the control surfaces and rivet heads, wear of the gap seals or peeling of the anti abrasion coating. Check for loose rivets and/or other gap seal attach hardware.

PART B. MAINTENANCE.

- 1 There are no special tools required to maintain the seals. Any tools needed are basic hand tools.
- 2 Maintenance of the gap seals is to keep the seal surface clean of oil and dirt and the edge of the seal touching the control surface smoothly. If the gap seal appears to be abrading the control surface, 3M 5490 Teflon tape or equivalent may be applied to the gap seal to act as a wear surface.
- 3 If upon installation or through wear, there is a warp in the seal, or it lies unevenly, you may drill a # 40 hole and cut the seal to the hole in a direction 90 degrees to the trailing edge of the seal. Drill the hole in the center of the warp 1/2" from the trailing edge of the surface to which the seal is attached. The slots should be no closer than 6" to each other or the edge of the seal.
4. When washing aircraft, care should be taken to brush along the length of the seal rather than perpendicular to, or across the seal.
5. When aircraft is painted care should be taken to protect anti-abrasion coating from strippers or paint. If coating is damaged, use 3M 5490 tape or equivalent to replace.

PART C. CRACKING, DEFECTS, LOOSE RIVETS.

1. If cracks are found in a seal, stop drill the crack. If there are more than three cracks in a seal it must be replaced.
2. If the anti- abrasion coating peels or wears replace with 3M 5490 or equivalent.
3. If there are excessive kinks or bends in the seals, and the airflow over the control surface is disturbed, the seal must be replaced.
4. If seal rivets become loose you may drill the rivet and replace with the next size rivet.

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