

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

*Number* SA855GL

*This certificate, issued to* General Aviation Corporation  
Rock County Airport  
Janesville, WI 53545

*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.* (See Type Certificate Data Sheet 2A13 for Complete Certification Basis.)

*Original Product — Type Certificate Number:* 2A13

*Make:* Piper

*Model:* PA-28-151, 28-181, 28-161, 28R-201, 28R-201T, 28-236, 28RT-201, 28RT-201T, 28-201T

*Description of Type Design Change:*

Install Aileron and Flap Gap Seals as described by the following:

a. Drawing GSPA28-TW, Revision A, dated November 12, 1985; or Drawing GSPA28-TW-R1, No Revision, dated February 11, 1987,

b. Installation Instructions titled "General Aviation Corporation Installation Manual PA-28 Taperwing", Revision B, dated June 10, 1986, or later FAA approved revisions.

*Limitations and Conditions:*

This installation is applicable to those aircraft equipped with depression ribbed, not corrugated, flap and aileron surfaces.

The compatibility of this installation with all other FAA approved modifications must be determined by the installer.

The applicability for the Model PA-28-151 is as follows:

(cont. 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:* August 22, 1984

*Date reissued:*

*Date of issuance:* November 2, 1984

*Date amended:* April 8, 1986; March 18, 1987



*By direction of the Administrator*  
*W. F. Horn*  
\_\_\_\_\_  
(Signature)

W. F. Horn  
Manager, Chicago Aircraft Certification Office,  
ACE-115C, Central Region, FAA

(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.

MEMORANDUM FOR THE RECORD  
SUBJECT: [Illegible]

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[Illegible text]

[Illegible text]

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

*Number* SA855GL

Date of Application: August 22, 1984  
Date of Issuance: November 2, 1984

**LIMITATIONS AND CONDITIONS:**

- a. Serial numbers 28-7615001 and up; install flap and aileron gap seals.
- b. All other serial numbers; install flap seals only.

END

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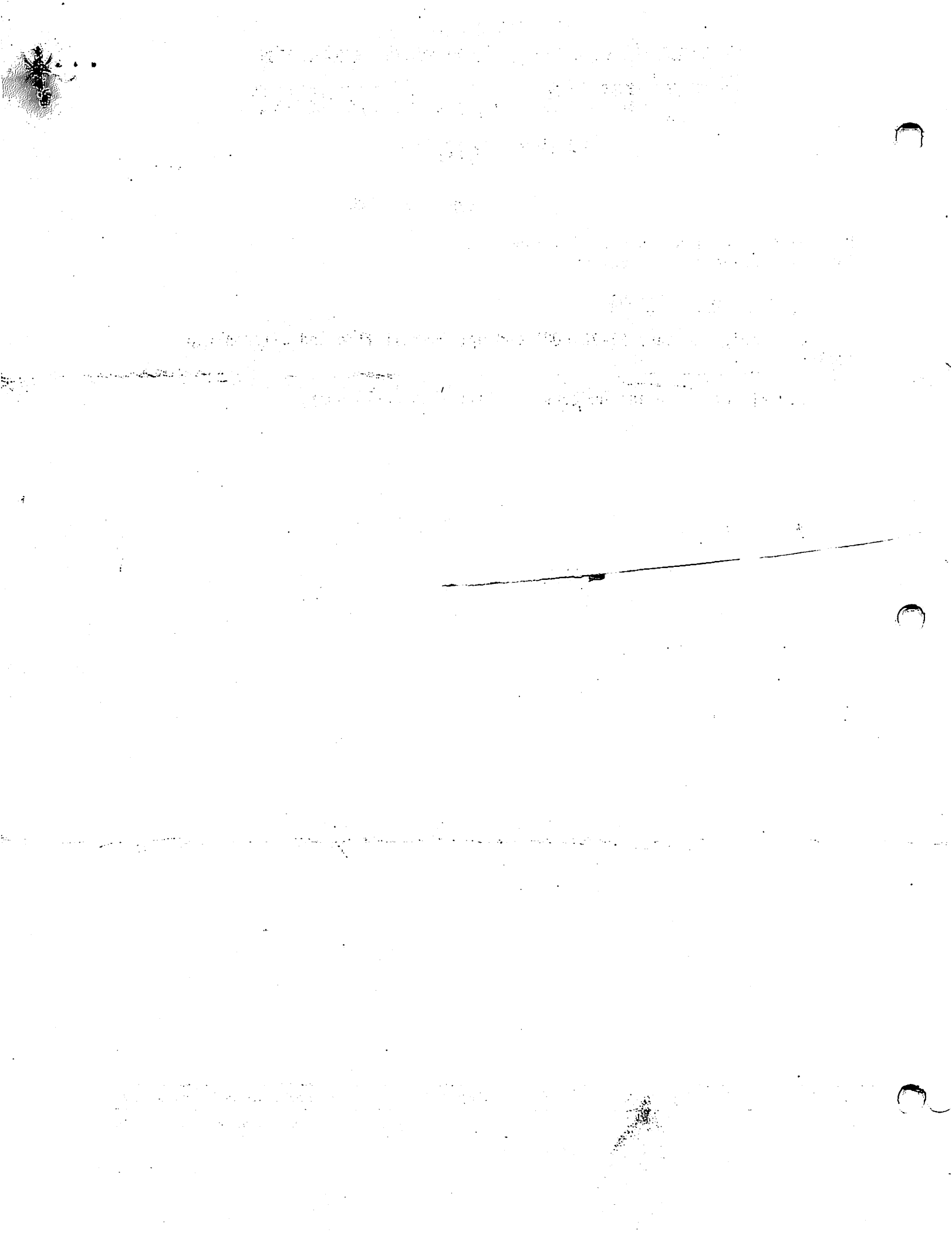
*Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.*

FAA FORM 8110-2-1 (10-89)

*This certificate may be transferred in accordance with FAR 21.47.*

PAGE 3 OF 3 PAGES

FAA AC 78-4435



General Aviation Corp.

Maintenance Manual

Gap Seals  
Piper PA-28 Taperwing

March 5, 1984

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General Aviation Corp.

Page 1

Maintenance Manual

Gap Seals  
Piper PA-28/32 All Models

Part I Inspection

1. Daily inspection at pre-flight to ensure there is no binding of control, bent gap seals, or broken pieces.
2. When aircraft has been stored outside during snow or freezing conditions, a careful inspection should be made of areas behind and under the seals for ice accumulations. If ice is found which can not be removed by careful brushing with the seal held slightly away from surface; the aircraft should be de-iced or defrosted as necessary.
3. 100 hrs. inspections are suggested to check for chafing of the control surfaces, wearing of the gap seals, peeling of the teflon coating and/or wearing of the rivets. Check for loose rivets and/or other hardware that attach the gap seals to the aircraft.

Part II Maintenance

1. Maintenance of the gap seals is to keep the seal surface clean of oil and dirt and edge of the seal touching the control surface smoothly. If the gap seal appears to be abrading the control surface, teflon tape can be applied to the mating surface of the gap seal, to act as a wear surface. This tape is a 3M product P/N 5490, or P/N 5421 of 1/2 inch or 3/4 inch width. It should be visually inspected at pre-flight and if it is worn through, replace before flight, to prevent control wear.
2. If upon installation, or through wear, there is a warp in the seal or it lies unevenly, you may drill a #40 size hole and cut the gap 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 cut in the seal should be trimmed to give a slot 1/16" wide, with parallel edges. These slots should be no closer than 6 inches to each other or the end of the seal. Refer to detail on page 3.
3. There are no required tools to maintain the seals. Any tools needed are basic hand tools.
4. When washing the aircraft, care should be taken to brush along the length of the seal rather than perpendicular to or across the seal.

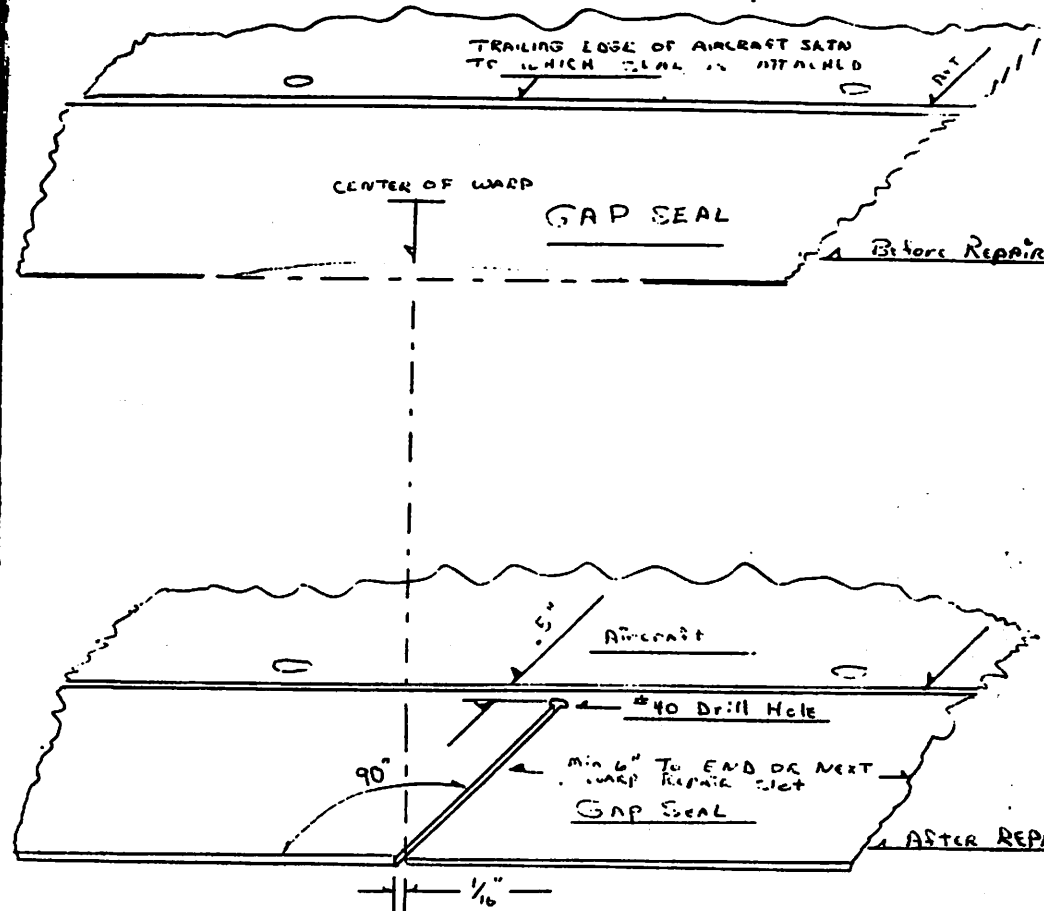
Part III Balancing

1. Balancing of controls are not required when these gap seals are installed on the aircraft.

Part IV Cracking, Defect, Loose Rivets

1. If cracks are found in a gap seal, stop drill the crack.
2. If there is more than 3 cracks in the gap seal the seal must be replaced.
3. If there is excessive bends or kinks in the seal, and it is disturbing the air flow over the control surface, the seal must be replaced.
4. If the seal rivet becomes loose you may drill the rivets and replace with the next size rivets.

## V. EXAMPLE OF REPAIR OF WARPED GAP SEALS



United States of America  
 Department of Transportation - Federal Aviation Administration  
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*certifies that the change in the type design for the following product with the limitations and conditions shown as specified herein meets the airworthiness requirements of Part 3 of the CIVIL AIR*

*Regulations. (See Type Certificate Data Sheet 2A13 for Complete Certification Basis.)*

*Original Product - Type Certificate Number: 2A13*

*Make: Piper*

*Model: PA-28-151, 28-181, 28-161, 28R-201, 28R-201T, 28R-201T, 28-236, 28RT-201, 28RT-201T, 28-201T*

*Description of Type-Design Change:*

Install Aileron and Flap Gap Seals as described by the following:

a. Drawing GSPA28-TM, Revision A, dated November 12, 1985; or Drawing GSPA28-TM-R1, No Revision, dated February 11, 1987.

b. Installation Instructions titled "General Aviation Corporation Installation Manual PA-28 Taperwing", Revision B, dated June 10, 1986, or later FAA approved revisions.

This installation is applicable to those aircraft equipped with depression ribbed, not corrugated, flap and aileron surfaces.

The compatibility of this installation with all other FAA approved modifications must be determined by the installer.

The applicability for the Model PA-28-151 is as follows: (cont. on page 3 of 3)

*This certificate and the supporting data which is the basis for approval shall remain in effect until the*

*included suspended, voided, or revocation date is otherwise established by the Administrator of the*

*Federal Aviation Administration.*

Date of application: August 22, 1984

Date received:

Date of issuance: November 2, 1984

Date recommended: April 8, 1986; March 18, 1987



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

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

Number SA855GL

Date of Application: August 22, 1984  
 Date of Issuance: November 2, 1984

LIMITATIONS AND CONDITIONS:

- a. Serial numbers 28-7615001 and up; install flap and aileron gap seals.
- b. All other serial numbers; install flap seals only.

END

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*This certificate may be transferred in accordance with FAR 21.47.*

GAC WING GAP SEAL CHECKLIST  
 FOR MODEL:  
 PIPER PA28 TAPERWING STYLE AIRCRAFT

CHECK	PART #	# REQ'D	DESCRIPTION
✓	A-6-106	20	Countersunk Rivnut
✓	AN526-632-R8	20	Roundhead Screw
✓	CR3243-4-3	104	Roundhead Cherrymax Rivet
✓	AN936-A6	20	Lock Washer
✓	AN960-6	104	Flat Washer
✓	LOF-TW	1	Left Outboard Flap Seal
✓	ROF-TW	1	Right Outboard Flap Seal
✓	OF-TW	2	Outboard Flap Seal
✓	LIF-TW	1	Left Inboard Flap Seal
✓	RIF-TW	1	Right Inboard Flap Seal
✓	6A-TW	2	Aileron Seal
✓	5A-TW	2	Aileron Seal
✓	4A-TW	2	Aileron Seal
✓	3A-TW	2	Aileron Seal
✓	2A-TW	2	Aileron Seal
✓	RIA-TW	1	Right Inboard Aileron Seal
✓	LIA-TW	1	Left Inboard Aileron Seal
✓		1	Copy of S.T.C. SA855GL
✓		1	Copy Taperwing Installation Manual
✓		1	Copy Taperwing Maintenance Manual

GAP SEAL INSTALLATION  
 HELPFUL HINTS

PA-28/32 straight and taper wing models:

After riveting all gap seals and before reinstalling control surfaces, push up on the trailing edge of the seals to return the original bend angle to seals which may have been altered during installation. Also line up all trailing edges of seals to produce a straight line trailing edge as viewed from the wing tip looking inboard. Do this by pushing up or down on seals as needed.

PA-28/32 taper wing only:

Before riveting flap seals P/N LOF-TW and ROF-TW trim the outboard of each sufficiently to give the 1/8 inch gap between it and the inboard aileron gap seal. The LOF-TW and ROF-TW must be trimmed in this manner to provide clearance for full aileron travel. Be sure to check clearance after ailerons are reinstalled.

NOTE: Use caution if aircraft is to be stripped in preparation for painting. stripper will deteriorate the teflon coating which is baked on the side of the seal that contacts the control surfaces.

3377 Kit Serial Number

This kit certified for the following Piper Aircraft: PA-28-151, 28-181, 28-161, 28R-201, 28R-201T, 28-236, 28RT-201, 28RT-201T, 28-201T under Supplemental Type Certificate number SA855GL.

THIS KIT INSPECTED AS PER GAC FMA MANUAL. SIGNATURE. R. Smith



GENERAL AVIATION CORPORATION  
GAP SEAL INSTALLATION MANUAL  
PIPER PA-28 TAPERWING

GROUP 1

AILERON GAP SEALS

EAA  
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CERTIFICATION OFFICE  
CENTRAL REGION

1. Remove both ailerons.
2. Beginning with the left wing, position the left inboard aileron gap seal P/N, LIA-TW 1/8 inch outboard of the outboard edge of the left flap with the bottom of the flap seal flush with the bottom skin of the wing (see detail #1). Using the most inboard pilot hole as a guide drill a #40 hole in the rear wing spar and Cleco the seal in place. (Hold the opposite end of the seal in place by hand and locate on the 3/4 inch leg of the seal where the existing rivet heads on the spar prevent the gap seal 3/4 inch leg from laying flush against the spar. Drill a 5/16 inch hole at these locations.) Using the most outboard pilot hole in the seal as a guide drill another #40 hole in the spar and install a Cleco. Drill the last #40 hole in the spar using the pilot hole as a guide.
3. Position the second aileron seal, P/N 2A-TW, 1/8" outboard of inboard seal, P/N, LIA-TW, with the bottom of the seal flush with the bottom skin of the wing. Using the most inboard pilot hole in the seal as a guide, drill a #40 hole in the rear spar and install a Cleco. (Hold the opposite end of the seal in place by hand and locate on the 3/4 inch leg of the seal where the existing rivet heads on the spar prevent the gap seal 3/4 inch leg from laying flush against the spar. Drill a 5/16 inch hole at these locations.) Using the most outboard pilot hole in the 3/4" leg of the seal as a guide drill a #40 hole in the spar and install a Cleco. Using the center pilot hole as a guide drill a #40 hole in the spar and install a Cleco. Drill remaining 8 holes.
4. Position the third aileron gap seal P/N 3A-TW, 1/8" outboard of the 2A-TW, seal with the bottom of the seal flush with the bottom skin of the wing. Using the most inboard pilot hole in 3/4" leg of the seal as a guide, drill a #40 hole in the rear spar and install a Cleco. Position the outboard end of the seal by hand and using the most outboard pilot hole as a guide, drill a #40 hole in the spar and install Cleco. Drill remaining two holes.
5. Position the fourth gap seal, P/N 4A-TW, 1/8" outboard of the 3A-TW seal, with the bottom of the seal flush with the bottom wing skin, (see detail #1). Using the most inboard pilot hole in the 3/4" leg of the seal as a guide drill a #40 hole in the rear spar and install a Cleco. Position the outboard end of theseal by hand and insure clearance of the existing rivets in the rear spar as in step 2 above. Using the most outboard pilot hole as a guide drill a #40 hole in the spar and install a Cleco. Drill the remaining 5 holes all #40.

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GENERAL AVIATION CORPORATION  
GAP SEAL INSTALLATION MANUAL

cont.

Page 2.

GROUP 1

AILERON GAP SEALS

6. Position the fifth aileron gap seal, P/N 5A-TW 1/8 inch outboard of the 4A-TW seal with the bottom of the seal flush with the bottom wing skin. Using the most inboard pilot hole in the 3/4 inch leg of the seal as a guide, drill a #40 hole in the rear wing spar and install a Cleco. (Hold the opposite end of the seal in place by hand and locate on the 3/4 inch leg of the seal where the existing rivet heads on the spar prevent the gap seal 3/4 inch leg from laying flush against the spar. Drill a 5/16 inch hole at these locations.) Using the most outboard pilot hole as a guide, drill a #40 hole in the spar and install Cleco. Drill the remaining five (5) holes all #40.
7. Position the sixth aileron gap seal P/N 6A-TW, 1/8 inch outboard of the 5A-TW seal with the bottom of the seal flush with the bottom wing skin. Using the most inboard pilot hole in the 3/4 inch leg of the seal as a guide drill a #40 hole in the rear spar and install a Cleco. Position the outboard end of the seal by hand and using the most outboard pilot hole as a guide drill a #40 hole in the spar and install a Cleco. Drill the remaining #40 hole.
8. Remove all aileron gap seals. Enlarge the attachment holes in the spar for the P/N's LIA-TW, 3A, and 6A-TW seals using a #10 drill. Countersink these holes to accomodate P/N A6-106 countersunk rivnuts. Enlarge the attachment holes in the PN's LIA-TW, 3A-TW, and 6A-TW seals using a #27 drill. Remove all shavings from the rear spar area and debur gap seals. Corrosion proof seals with alodine solution or equivalent. Cleco the P/N's, 2A-TW, and 5A-TW in place. Enlarge all attachment holes to #27 and attach seals using CR3242-4-3 roundhead Cherrymax rivets with AN960-6 flat washers under the rivet head.
9. Reinstall ailerons.
10. Install P/N's, LIA-TW, 3A-TW, and 6A-TW seals using P/N AN526-632-R8 screws and AN936-A6 lock washers. Move ailerons through their full travel several times to check for interference with the gap seals.
11. Repeat steps 2,3,4,5,6,7,8,9, and 10 for the right aileron.
12. Perform paperwork and make logbook entries.

Component Weights:	Component Arms:
Aileron Gap Seals.....1.50 lbs.	130.4 inches
Hardware ..... .25 lbs.	130.4 inches

GENERAL AVIATION CORPORATION  
GAP SEAL INSTALLATION MANUAL  
PIPER PA-28 TAPERWING

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GROUP 2

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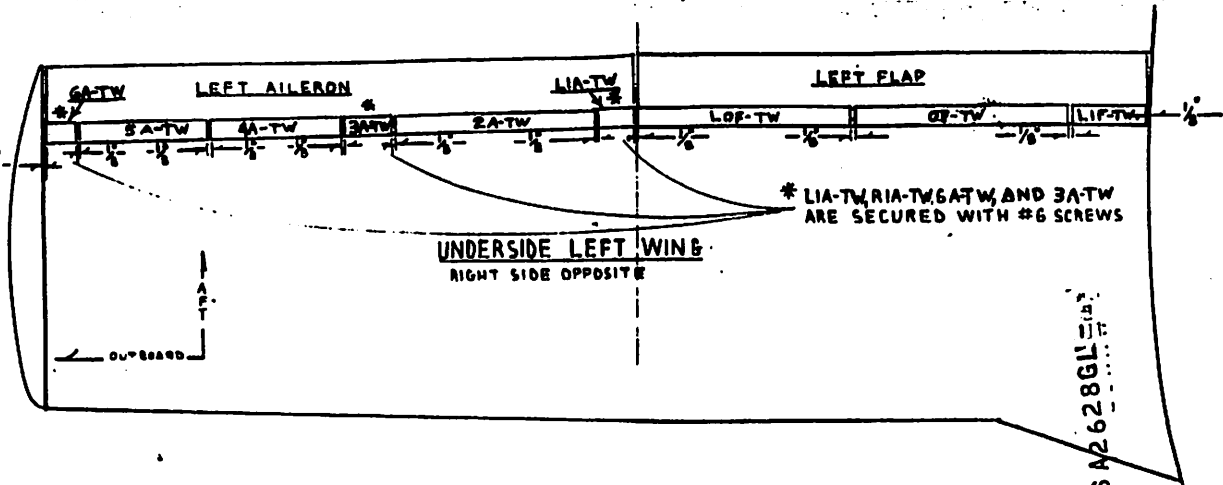
FLAP GAP SEALS

1. Lower the flaps to full down.

2. Beginning with the left flap, remove the clevis bolt that attaches the flap actuating rod to the inboard end of the flap. Retain the bolt and spacer for reinstallation. The flap will now swing down low enough to allow installation of the flap gap seals.

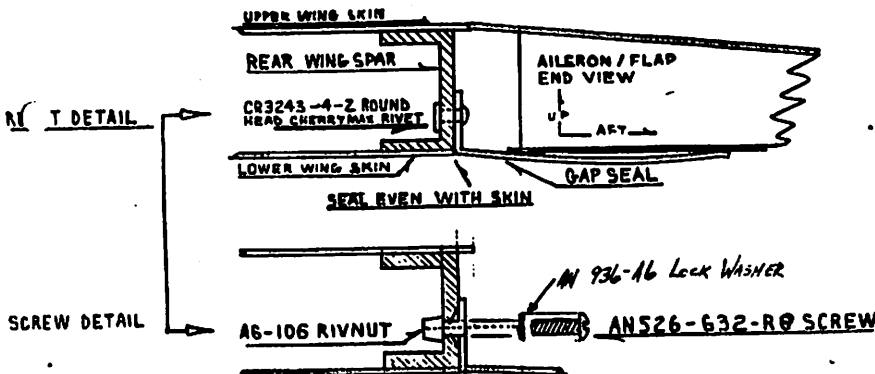
3. Beginning at the inboard of the flap. (See detail #1) position left inboard flap gap seal P/N LIF-TW with the bottom of the seal flush with the bottom of the wing skin, and the inboard tab of the seal butted fully against the fuselage. Using the most inboard pilot hole in the 3/4" leg of the seal as a guide drill a #40 hole in the rear spar and install a P/N TRA-4X1/4 PK screw to temporarily hold the seal in place. Raise the flap by hand and position the seal so that there is no gap between the flap and seal. Hold the seal in this position and lower the flap. Using the two pilot holes in the inboard tab as a guide, drill two #40 holes in the fuselage and install PK screws to temporarily hold the seal in place. Using the inboard pilot hole in the 3/4" leg of the seal as a guide drill a #40 hole in the spar and install a PK screw. Raise the flap by hand and mark the positions of the two existing rivets on the flap where they interfere with the seal. Make two slight bends at the trailing edge of the seal at these two points to prevent interference with the movement of the flap.

4. Position the outboard flap seal P/N OF-TW, 1/8" outboard of the inboard seal with the bottom of the seal flush with the bottom wing skin (see detail #1). Using the most inboard pilot hole in the 3/4" leg of the seal as a guide, drill a #40 hole in the rear wing spar and install a Cleco. (Hold the opposite end of the seal in place by hand and locate on the 3/4" leg of the seal where the existing rivet heads on the spar prevent the gap seal 3/4" leg from laying flush against the spar. Drill a 5/16" hole at these locations.) Using the most outboard pilot hole in the 3/4" leg of the seal as a guide drill a #40 hole in the rear spar and install a Cleco. Use one of the center pilot holes as a guide and drill a #40 hole in the spar and install a Cleco. Drill the remaining nine holes in the spar all #40, using the pilot holes as a guide.



GENERAL AVIATION CORPORATION  
GAP SEAL INSTALLATION MANUAL  
PIPER PA-28 TAPERWING

Detail No. 1.

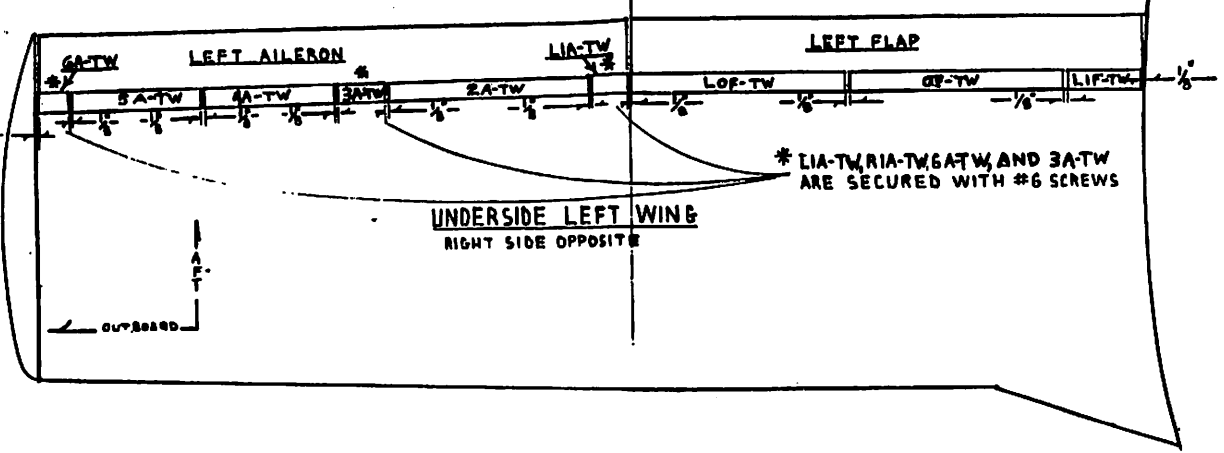


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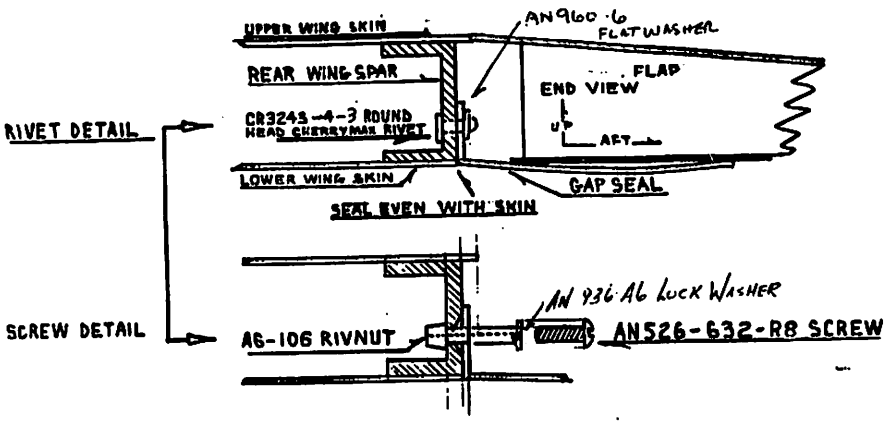
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CENTRAL REGION

SA 2628GL



GENERAL AVIATION CORPORATION  
 GAP SEAL INSTALLATION MANUAL  
 PIPER PA-28 TAPERWING



Detail No. 1.

GENERAL AVIATION CORPORATION  
 GAP SEAL INSTALLATION MANUAL

GROUP 2

FLAP GAP SEALS

5. Position the left outboard flap gap seal, P/N LOF-TW 1/8" outboard of the outboard flap seal, P/N OF-TW, with the bottom of the seal flush with the bottom wing skin. Using the most inboard pilot hole in the 3/4" leg of the seal as a guide, drill a #40 hole in the rear wing spar and install a Cleco. (Hold the opposite end of the seal in place by hand and locate on the 3/4" leg of the seal where the existing rivet heads on the spar prevent the gap seal 3/4" leg from laying flush against the spar. Drill a 5/16" hole at these locations.) Using the most outboard pilot hole in the seal as a guide, drill a #40 hole in the spar and install a Cleco. Use the center Pilot hole as a guide and drill another #40 hole in the spar and install a Cleco. Drill the remaining eight holes in the spar.. all #40.
6. Remove all flap gap seals. Remove all shavings from the rear spar and deburr gap seals. Corrosion proof the seals with alodine solution or equivalent. Cleco all seals in place and enlarge the attachment holes with a #27 drill. Attach the seals using CR3243-4-3 roundhead Cherrymax rivets and AN960-6 flat washers under the rivet head.
7. Reinstall the clevis bolt and spacer attaching the flap actuating rod. Move the flap through full travel several times to inspect for interference with the gap seals.
8. Repeat steps 2,3,4,5,6, and 7 on the right flap.
9. Perform paperwork and make logbook entries.

Component Weights:	Component arms:
Flap gap seals 1.50 lbs.	132.0 inches
Hardware .30 lbs.	132.0 inches

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