

## **REPLACING THE PA32 and PA34 GLARESHIELD**

### **“PLEASE READ ALL THE INSTRUCTIONS CAREFULLY BEFORE STARTING”**

Over the years the glareshield that Piper installed on their panel has in many cases become an eyesore due to its being subjected to the heat buildup from the sun beating down through the windshield(s). The vinyl or plastic covering was installed during the build up of the forward cabin even before the windshield molding was installed and therefore was riveted in place with the molding. Not such a bad idea if you never plan on having to replace it. But since the planes are lasting far longer than the vinyl, the glareshield has become a problem for many.

There are some fiberglass glareshields available as aftermarket options. I have read from those who have them in most cases have been pleased with them other than some say they are difficult and time consuming to install. Others have said they do not like the reflective glare they experience. I for one have never made the installation but I have removed one to provide for placement of our glareshield I for one would be concerned about the hard surface of the fiberglass in the event of an impact.

By all definitions you could also call our glareshield a faux glareshield insomuch as it looks like its part of the panel when in reality it just lays on top of the old Glareshield area. Not only does this greatly add to the beauty of your plane, the eyebrow is soft should you ever hit it from a sudden stop.

Before I get into the replacement of your old glareshield, I'm sure all of you are wondering about the legal aspects. I have discussed this to great length with the FAA here in Oklahoma City and it has been their opinion that this is only a minor cosmetic addition to the plane and needs no approval other than a log entry.

If you are still concerned, I would suggest you discuss the replacement of the glareshield with your local FSDO. If they are uncomfortable with just a log book entry, you could request that your mechanic submit a 337 and request they grant a field approval based on the installation has been previously granted Field approval by the FSDO in Oklahoma City. We have included a sample copy of the FAA field approval (337)

Due to the many different models of Pipers, it will be hard to provide specific instructions. I will try to assist with some general instructions regarding the changes that you may need to make. If you have any specific questions regarding your airplane, please feel free to call me at any time.

Many of the models have hand holds incorporated in the top of the instrument panel. I personally feel these are not needed and actually distract from the beauty of the new glareshield and age the plane since the factory no longer has hand holds. I have not provided for the hand holds and should you decide you want to keep them; you will need to cut the hand openings in the new glare shield.

Next regarding the instrument panel covers. Many have either a one piece or two piece molded eyebrow secured to the top of the panel or a separate plastic covered eyebrow attached to the top of the instrument panel plastic covers. No matter which you have, these must be removed for this installation.

**If you have the plastic instrument overlay (over the instruments) on the Pilots and co-pilots panel with the molded eyebrow, you will need to temporarily remove these to rework the covers. I have found the best way to trim off the eyebrow is with a Dremil tool using a cut off disc or with the 1/8 inch router bit. Another is with a coping saw with the blade turned 90 degrees. Make the cut along the top of the cover (with about 1/8 inch beyond the radius) and completely remove the molded eyebrow. Sand or file the edge of the overlay instrument covers to a smooth surface. The new glare shield will cover the cut edge. If you find after cutting off the eyebrow that a portion of the instrument panel still shows, we have provided a small strip of the Glareshield material covering that you can cut to cover the exposed portion. Just glue the trim to the panel using contact cement.**

**If you have the single or two piece instrument overlay without the molded eyebrow, just remove the attaching screws and remove it (them) from the panel. If this is the type you have, you may also have a strip of aluminum molding that is riveted to the top of the panel securing the forward edge of a the Piper vinyl eyebrow that is fastened to the top of your instrument panel. This eyebrow will be fastened with screws to the forward top edge of the instrument panel. After removing the eyebrow, you do not need to remove the riveted strip unless you just want to. You will need to replace the screws. You may also have a small plastic cover riveted to the top of the old glareshield. This may be removed or left in place. The new glareshield will lie right on top with no problem.**

**If you do not have an eyebrow, and you have performed the preceding tasks, you are ready to proceed.**

**There are two ways to do the replacement. One is with the windshields installed and the other is with the windshields removed. The glareshield may be removed without removing the windshields. But there is a problem in removing the screws attaching rectangular defroster outlets to the top of the old glareshield. We have provided two ways for securing the glareshield to the top of your instrument panel. One is with the four Nylon Fasteners and the other is with four small angle clips fastened to the existing screws on the face of the instrument panel and the third way is to secure it to the top of your panel with the provided PK screws. Depending on your specific model, you may find you will want to attach the new glareshield with either one of the above mentioned methods.**

**I personally would recommend removing the windshields rather than fight with the screws. I have done it both ways and prefer doing it with the windshield(s) removed. I feel removing the windshields is an easy task and it also allows me to make sure the windshields are good and sealed when I reinstall them, especially due to their history of the windshields leaking.**

**For the record, I have removed both sides in less than 10 minutes and reinstalled both with new sealant in less than an hour. If adding new windshields, it takes another hour for proper fitting and sealing. Keep in mind, that the windshield installation must be made by or under the supervision of a FAA certified mechanic holding at least a "Airframe Mechanic certificate"**

**The rectangular defroster outlets are attached with two screws and self locking nuts and must be removed to provide for the new glareshield. These nuts can be difficult to remove. It will require a 5/16 socket and long extension (or nut driver) on the underside while a helper holds the head of the screws on the top side.**

**If the windshields are removed, I recommend just drilling out the heads. New hardware to reinstall the defroster outlets comes with the kit.**

**On your existing fascia (or glareshield) , the panel is covered with cloth or vinyl. This material extends over the entire original fascia starting on each side where the instrument panel is next to the windshield and extends to the lower edge of the windshield(s). This area next to the sides of the instrument panel is very close and can cause the new glareshield to be very tight between the instrument panel and the windshield. I recommend you take an Exacto knife and remove about six inches of the material on each side. Also you may wish to remove all of the cloth or fabric from the instrument panel up to the windshield (forward of the instrument panel). This will make the placement of the new glareshield much easier and the new glareshield will cover this entire area.**

**Mix up a small solution of dishwasher soap and water and brush on the ends of the glareshield in the area where the new glareshield fits between the windshield and the instrument panel. This area is very close and needs the lubrication of the soap to slip into place.**

**Place the new glareshield on top of the area above the instrument panel forcing it under the windshield molding around the entire lower edge of the windshield to the vertical windshield posts (make sure it is on top of the old portion of the covering, if applicable). Don't be concerned if you have small bumps on top of your panel, the new Glareshield will conform over them with a smooth contour. In the area near the center post, make sure the glareshield doesn't get caught on the rivets. If it does, the glareshield will not extend under the molding.**

#### **NOTE**

**When positioning the new Glareshield in place, do not be afraid to be a little aggressive, especially as it conforms around the sides of the instrument panel near the windshield. Just hit the eyebrow with your open fist forcing it down into the cavity between the windshield and under the windshield molding above the firewall. Continue forcing it down until it is laying flush on top of the instrument panel. With the new Glareshield in position, verify the holes for the defroster outlets on the Glareshield line up with the defroster openings on top of your old panel. We have found that in some cases when Piper punched the holes for the defrosters were not always exactly in the same location and you may need to cut or enlarge the existing holes in the aluminum fascia to enable you to install the defroster outlets through the new Glareshield. If you find this to be the case with your installation, you will need to temporarily remove the defroster SCAT hose and defroster outlet. Due to the aluminum being only .025, it will be very easy to change the hole for the defroster hose fitting to line up with the opening in the new glareshield. You will need to provide new holes for the defroster outlet, but more than likely it will fit just fine. Just make sure it is all the way forward against the windshield molding.**

**If the defroster holes line up, there is no need to remove the round defroster outlets (under the rectangular outlets) or SCAT hoses under the instrument panel. When the rectangular outlets are reinstalled on top of the new glareshield there will be no air loss through the outlets. Remove the glareshield from the panel for installation of the rectangular outlets previously removed.**

Observe on the new glareshield where the defroster outlets will be positioned, we have provided four screws with special round T-nuts. Remove the screws and install the defroster outlets with the air slots facing to the rear. Do not over tighten.

#### **NOTE**

You might wish to loosen a few of the screws (3 on each side) of the windshield retaining strip to make it easier to position the ends of the glareshield between the panel and the windshield. Be sure to tighten the screws when finished.

Due to different models, you should you decide on securing it to the top of your panel with the provided clips and PK screws, or the Nylon fasteners. If your panel is flat and flush with the top fascia it is very easy to use the predrilled holes in the new glareshield as a pattern. With the new glareshield in position, just drill four 1/4 in holes in the fascia and press in the included Nylon fasteners.

If your model has the removable eyebrow, it will have screws securing it to the instrument panel and a small retaining strip on the forward edge. This retaining strip is riveted to the top fascia and does not need to be removed. You will need to remove the screws that attach the eyebrow to the top of the instrument panel. Remove the eyebrow by sliding it out of the retaining strip and replace all the screws but four. Secure the four clips to the instrument panel and install the four clips on the instrument panel using the screws previously removed. Use the prick punch to also make the holes on op of the panel and attach the glareshield to the clips with the four screws and washers.

This completes the replacement of glareshield. All that is remaining is a log book entry. I recommend the following:

Replaced the old glareshield with a new glareshield in accordance with the manufacturer's instructions. This is a minor cosmetic change requiring no 337.

Name and Date

#### **WINDSHIELD INSTALLATION**

You as the owner may also remove the windshields but when it comes to reinstalling the windshields, this must be done by or supervised by a licensed mechanic holding at least an "Airframe" Mechanics Certificate.

I have been using a system that is easy, very inexpensive, does not use the foam tape and provides a windshield that is absolutely water tight, easy to apply and cleans up with plain water

Clean all of the old sealer, tape, silicone (or what have you) from the windshield channel, trim molding and windshield(s).

I highly recommend PolySeamseal All purpose Adhesive caulking made by OSI Sealants. It comes in clear as well as white. Use the clear for the windshield installation and the white for the final out side sealing. It can be purchased from Home Depot, Lowes or Ace hardware.

**Lay a heavy bead of the sealant on the fuselage frame work (on one side only) for the windshield, (keep it ¼ in below the edges so it won't squeeze out on the inside). Fill inside the upper channel and side channel where the windshield slips into place. Apply two heavy beads of the sealant down the center post.**

**Place the windshield into position and press against the sealer. Repeat the process for the other side. With both windshields in position, lay a heavy bead of the sealer down the center post between the Plexiglas and on the edge of the Plexiglas and along the bottom edge of the windshield making sure you leave no gaps. Apply a large amount of the sealer in the center at the very bottom, totally filling the open cavity and install the center and lower trim strips. When you have all the screws installed, clean up the residue (sealer/caulk) with water). Note: the clear Poly-seamseal is white when you use it and dries clear.**

**When all finished, mask off (with ¼ inch vinyl tape) the windshield around the outside periphery leaving a 5/16 in gap between the tape and the windshield molding. Apply a bead of the white Polyseamseal around the entire area masked off and smooth off with your finger (keeping your finger wet at all times). When the bead is complete, remove the tape very carefully pulling away from the beaded area. "Do not wait until the Polyseamseal is dry before removing the tape."**

**Please note that you will need your mechanic to assist you with the windshield installation and log entry.**

**You are now ready to enjoy your new glareshield.**

**Aircraft Door Seals, LLC.  
817-567-8020**





## MAJOR REPAIR AND ALTERATION

(Airframe, Powerplant, Propeller, or Appliance)

Form Approved  
OMB No. 2120-0020  
**For FAA Use Only**  
Office Identification

**INSTRUCTIONS:** Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. 1421). Failure to report can result in a civil penalty not to exceed \$1,000 for each such violation (Section 901 Federal Aviation Act of 1958).

<b>1. Aircraft</b>	Make <b>Piper Aircraft</b>	Model <b>PA28-180</b>
	Serial No. <b>28-872</b>	Nationality and Registration Mark <b>USA N180LR</b>
<b>2. Owner</b>	Name (As shown on registration certificate) <b>Richard T. Russ La Neal W. Russ</b>	Address (As shown on registration certificate) <b>7100 NW 63rd. St, Hangar 1002 Bethany, OK 73008</b>

**3. For FAA Use Only**

The alteration data identified herein complies with applicable airworthiness requirements and is approved for use only on the aircraft described above subject to conformity inspection by a person authorized in § 43.7.

Date: JUN 28 2005 *[Signature]*  
FAA Inspector, ASW-FSDO-15 (OKC)

**4. Unit Identification**

**5. Type**

Unit	Make	Model	Serial No.	Repair	Alteration
AIRFRAME	~~~~~ (As described in Item 1 above) ~~~~~				X
POWERPLANT	<b>SAMPLE</b>				
PROPELLER	<b>SAMPLE</b>				
APPLIANCE	Type				
	Manufacturer				

**6. Conformity Statement**

<b>A. Agency's Name and Address</b> Richard T. Russ 7100 NW 63rd. St, Hangar 1002 Bethany, OK 73008	<b>B. Kind of Agency</b> <input checked="" type="checkbox"/> U.S. Certificated Mechanic <input type="checkbox"/> Foreign Certificated Mechanic <input type="checkbox"/> Certificated Repair Station <input type="checkbox"/> Manufacturer	<b>C. Certificate No.</b> A&P 1511500
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D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

Date: June 27, 2005      Signature of Authorized Individual: *Richard T Russ*

**7. Approval for Return To Service**

Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is  APPROVED     REJECTED

<b>BY</b>	FAA Fit. Standards Inspector	Manufacturer	<input checked="" type="checkbox"/>	Inspection Authorization	Other (Specify)
	FAA Designee	Repair Station	<input type="checkbox"/>	Person Approved by Transport Canada Airworthiness Group	
Date of Approval or Rejection		Certificate or Designation No. <b>A&amp;P1511500IA</b>		Signature of Authorized Individual	

## NOTICE

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

**8. Description of Work Accomplished**  
(If more space is required, attach additional sheets. Identify with aircraft nationality and registration mark and date work completed.)

The original glare shield provided by the manufacturer was vinyl glued to the top of the instrument panel. Over the years this material cracked and deteriorated to a point it became useless as a glare shield and an eyesore for the owners.

This 337 is to provide a field approval for a replacement glareshield.

Removed seats to facilitate removal of defroster outlets on top of the existing instrument panel glareshield.

1. Disconnected the two SCAT hoses from two defroster outlets on the underside of existing glare shield and removed outlets from glare shield.

### NOTE

The new glareshield is fabricated from light weight temperature stabilized .040 Lexan (polycarbonate) and covered with FAA approved 1/8 inch high density foam rubber and FAA approved non-glare vinyl. Fabrication of the glareshield was performed by FAA certified repair station GK9R762J located at Sundance Airpark, Yukon, OK. This replaces the original vinyl glued to the top of the original panel.

2. Placed the new glare shield in place on top of the instrument panel until it was resting in the most forward under the windshield molding.
3. Using the four predrilled holes in the new glare shield. Drilled four #30 pilot holes for securing the eyebrow portion of the glare shield to the top of the instrument panel. Installed four A3135-017-24A counter sunk washers, and four MS21207-D8R8A flat head screws securing the glare shield to the top of panel.
4. Reinstalled the defroster outlets in the existing glareshield using the pre-punched holes in new glareshield and reattached the defroster SCAT tubing.
5. Reinstalled seats and entered change in aircraft records.
6. Due to the simplistic nature of this installation, no ICA is required
7. Total weight of the new glareshield is 20 oz. and will not require a change to the wt. and bal.

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Additional Sheets Are Attached