

IMPORTANT DOCUMENTS
KEEP WITH AIRCRAFT RECORDS

B.A.S., INC INSTALLLATION INSTRUCTIONS

**INERTIA REEL SHOULDER HARNESS
 BEECHCRAFT**

Read all instructions carefully before proceeding with installation. If you experience problems, or if the instructions are not clear to you, please phone B.A.S., Inc. @ 888-255-6566 before proceeding. If we are not available when you call let the phone ring- --our answering machine will take the message and we will contact you promptly. **Refer to Note Page for specific model instructions.**

All work to be done in accordance with procedures in Beechcraft maintenance manual for this aircraft.

1. Remove headliner panels and enough insulation to gain access to installation location. It may be necessary on **early models** with one-piece headliners to remove the two headliner support brackets. They will be re-installed later. **Refer to Photo No. 1, Page 4.**
2. The reels will be located behind the pilot and co-pilots head approximately 5 inches aft of rear doorpost. This should be approximately 20 inches forward of rear canopy ring (refer to step 7) In this area check for obstructions between outer structural frame and inboard roof stiffener angles on both sides of aircraft. **Refer to Photo No. 2 , Page 4.**
3. Temporarily install PN 1-Be (**red left & green right**) by hooking the small inner flange under the rolled edge of the inboard angle as per drawing and photo's. Check for fit. Limit flange pull-up to .005 by using a shim, if needed, between PN 1-Be and the inboard stringer. **NOTE:** Max. shim thickness is .032.2024-T3. If PN 1-Be does not fit STOP and call B.A.S., Inc. **Refer to Photo No. 3 & 4, Page 4.**
4. Slip reel assemblies onto PN 1-Be to make sure everything is going to fit. **NOTE: Allow room for your rivet puller to operate. Refer to Photo No. 5 & 6, Page 4.**
5. If all looks OK, mark frame and angle and remove reel assemblies, align PN 1-Be with marks and drill rivet holes and cleco clamp using PN 1-Be as a template. **NOTE: You will need an angle drill for inboard holes. Refer to Photo No. 3 & 4, Page 4 and Tool Photo Page.**
6. Remove PN 1-Be and clean out drill shavings, then re-install and cherry rivet into place with Cherry Max (CR3213-4-02 or NAS9301B-4-02) blind rivets. **Refer to Photo No. 3 & 5, Page 4.**
7. On rear of canopy ring approximately 20 inches aft of PN 1-Be and from 5 to 5 ½ inches, depending on rivet spacing, outboard of inboard angle. Locate space between 2 rivets and clean off insulation glue or undercoating. **NOTE: Do not scratch metal. Use solvent. Refer to Photo No. 2, Page 4 & Photo No. 7, Page 5.**
8. Temporarily attach strap to inboard hole of PN 1-Be and center between the 2 rivets mentioned in Step 7. Trim the length to fit. See edge margin in step 10. If strap is too short to reach canopy frame, stop. Do not drill. Contact B.A.S., Inc. **NOTE: It is better to make numerous small trimming cuts than 1 cut too short. Refer to Photo No. 2, Page 4.**

Beechcraft	Installation Instructions	Report 1103
		Page 1 of 6
REV B April 14, 2003	BAS Incorporated	Sheet 1

9. A small bend placed approximately 5/8 inch from trimmed end will make the strap lay snugly against the cabin roof. To maintain edge margin and still have the strap fit snugly, you can make a small bend on the end of strap so it fits the radius in the canopy ring. This will give a little more edge margin if needed. **NOTE: The strap should be as taught as possible , but will always have a .010 to .020 slack. Refer to Photo No. 7, Page 5.**
10. Mark the strap for a #11 hole, making sure you have .200 edge margin on both the metal strap and the edge of the canopy structural ring. **Refer to Photo No. 7, Page 5.**
11. Drill hole in strap at marked location. **NOTE: Keep hole in center of strap, drills tend to wander.** Now re-install strap on PN 1-Be pull taught and drill hole thru aft end thru canopy frame and outer skin of aircraft. **NOTE: Coat bare steel end with paint before permanent installation. Refer to Photo No. 7, Page 5.** Touch up hole in aircraft frame and skin with MIL-P-27377. Primer (optional zinc chromate).
12. Install aft end of strap with supplied AN525-10R7 screws and NAS-679-A3W nuts. **NOTE: Use some grease like Lubriplate on screws to seal holes and make nuts go on easier. Refer to Photo No. 7, Page 5.**
13. To locate the hole in headliner measure from a common spot on airframe, such as from the front headliner attach holes, to centerline of PN 1-Be and from the side headliner attach holes inboard to the centerline between reel mounting bolt holes. Take these measurements to the headliner with headliner laying face down and mark spot on metal headliner support plate. Measure from this spot 3 1/4 inches forward 2 1/2 inches aft, 2 1/8 inches outboard, 2 1/4 inches inboard. **NOTE: Measure twice and cut once.** Do not cut headliner at this time. **CAUTION: If you use a drill (DO NOT) let the drill touch the headliner. It will catch the fabric and tear out a big hole.** Cut out marked area on metal with tin snips. Also remove insulation in this area after hole is cut, clean metal around hole and apply a good coat of Pliobond or Stits Poly Tak around hole 1 inch wide. **Refer to Photo No. 8 & 9, Page 5.**
14. Re-install headliner in aircraft. **Refer to Notes & Installation Tips.**
15. Feel thru headliner to make sure your holes are cut in the correct location. If not, fix it before cutting fabric. Now cut fabric from corner to corner and trim so that a 1 inch flap will lie up on glued area. Lightly moisten fabric flaps with MEK and fold up and on to glued area. After all flaps have been glued into place, slip the reel assembly up and onto the PN 1-Be bracket. Align holes with an awl and install bolts and nuts as per Figure No. 1-Beechcraft. **NOTE: Be sure wires are not trapped between reel and roof. Refer to Photo No. 10, Page 5.**
16. Install dress cuffs by holding cuff up to headliner to check fit. Trim if needed. Install #6 x 3/8 inch sheet metal screws to hold cuffs into place. **NOTE: Do not use longer screws, they may jamb the reel. Refer to Photo No. 11, Page 5.**
17. Install Velcro washers onto headliner by drilling #47 or 5/64 hole and installing #4 sheet metal screws. **CAUTION: Hold washer tight to fabric so the drill cuts thru the fabric and not catch it. Refer to Photo No. 12, Page 5.**
18. Install lap belts with the buckle half on the desired side, usually on the right. Use original bolts with 3/8 inch bushing. Belt ends should swivel freely.

Beechcraft	Installation Instructions	Report 1103
		Page 2 of 6
REV B April 14, 2003	BAS Incorporated	Sheet 1

19. Check the inertia reel's operation. Note there are several ways to do this without crashing the airplane. Remove greasy fingerprints from the upholstery.
20. Fill out the aircraft log book, weight and balance , equipment list and Form 337. Weight of kit is approximately 5 lbs. Subtract removed belt weight. Inches from datum varies with each model.

NOTES & INSTALLATION TIPS

1. Make prying tool to remove headliner. I made one out of .062 4130 . See tool photo.
2. Use wax on headliner attaching holes and studs.
3. Lube screw threads with door ease or lubriplate.

NOTE: For V35 Models refer to special Photo Sheet for inboard PN 1-Be attachment. V35 models have the plastic air duct screwed to the outboard side of the inboard roof stiffener angle instead of the inside, similar to earlier models. This may also apply to some other models.

NOTE: K & M 35 Models It isn't necessary to remove the rear 1/3 of the headliner panels because they are held in all the way with studs and can be rolled back out of the way.

If you have any comments, recommendations or add any thing to this list please contact Bud Blancher @ B.A.S., Inc. 888-255-6566 or Email bud@basinc-aeromod.com.

Beechcraft	Installation Instructions	Report 1103
		Page 3 of 6
REV B April 14, 2003	BAS Incorporated	Sheet 1

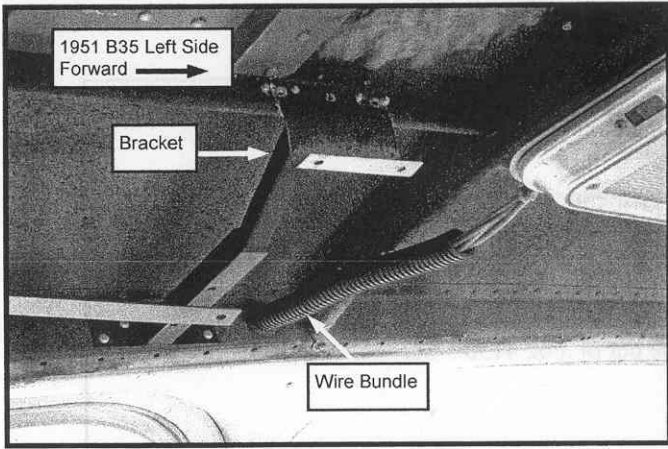


Photo No. 1 Headliner Bracket 1 Piece Headliner Installation Item No. 1

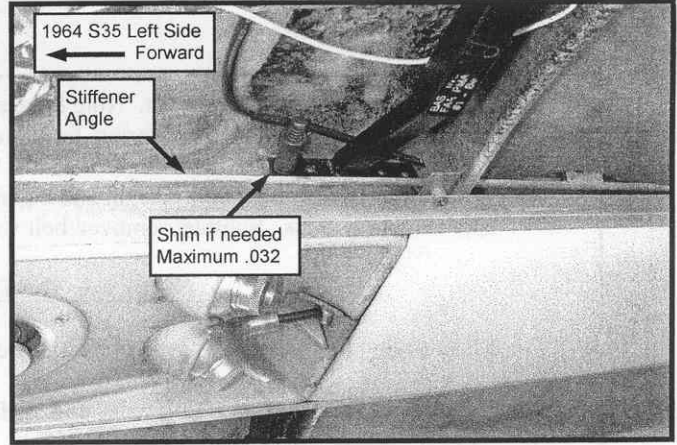


Photo No. 4 Installation Item No's 3 & 5

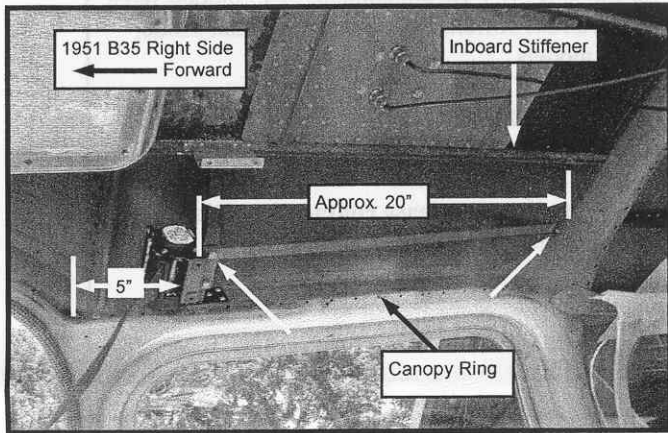


Photo No. 2 Tension Strap Attach Points Installation Item No. 2, 7 & 8

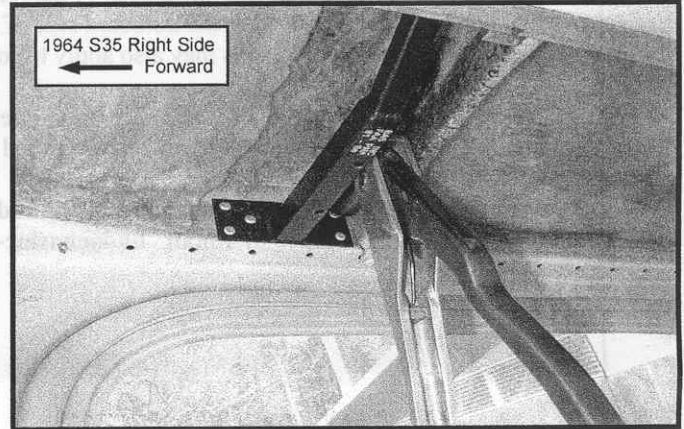


Photo No. 5 Installation Item No. 4 & 6

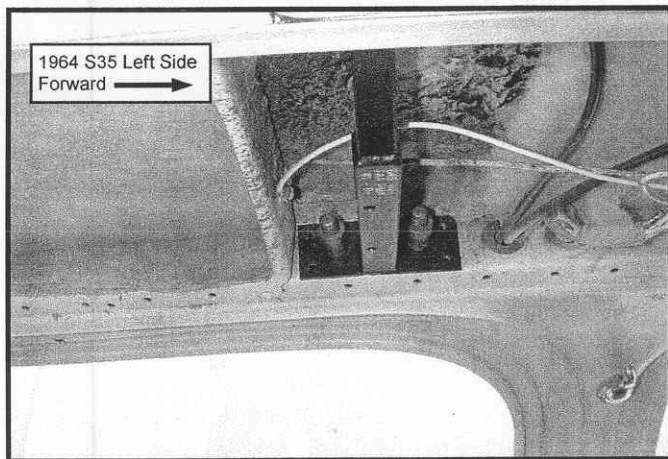


Photo No. 3 Installation Item No's 3, 5 & 6

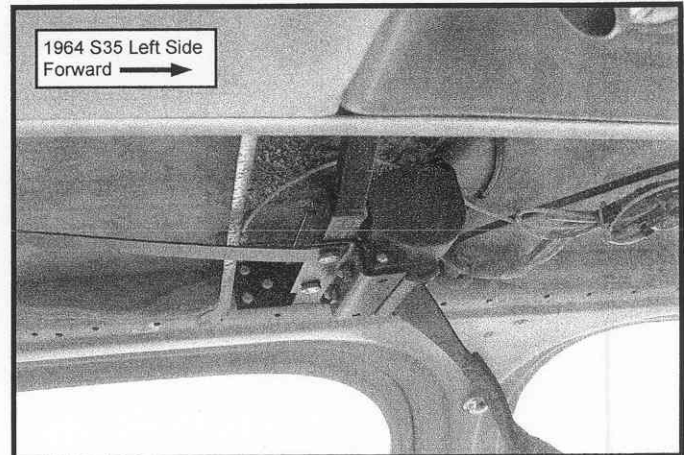


Photo No. 6 Installation Item No. 4

Beechcraft	<h1>Photographs</h1>	Report 1103
REV B April 14, 2003		BAS Incorporated
		Sheet 1

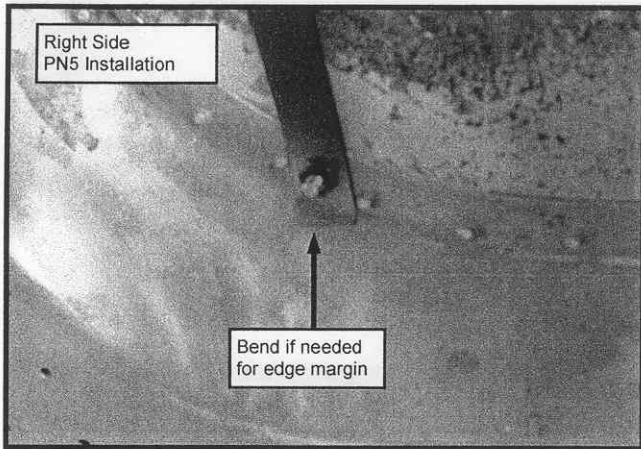


Photo No. 7 Installation Item No. 7, 9, 10, 11 & 12

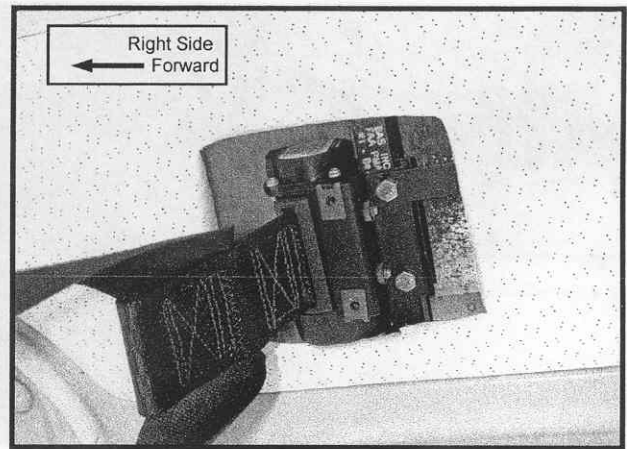


Photo No. 10 Installation Item No. 15

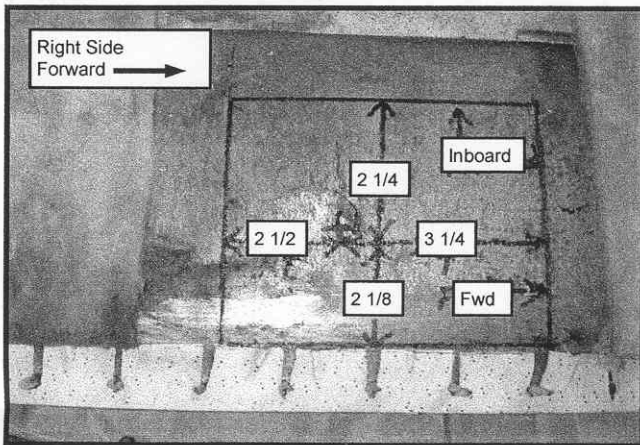


Photo No. 8 Installation Item No. 13

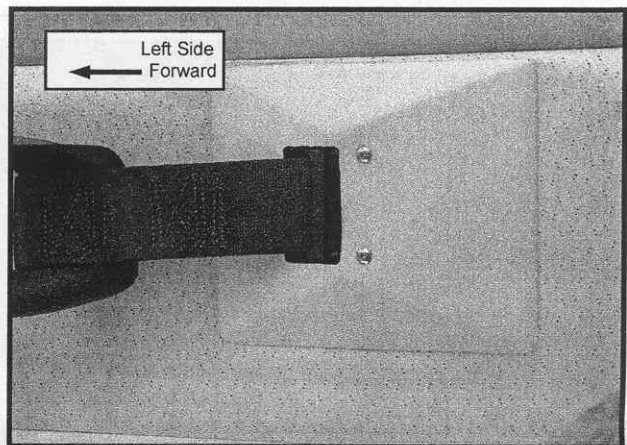


Photo No. 11 Installation Item No. 16

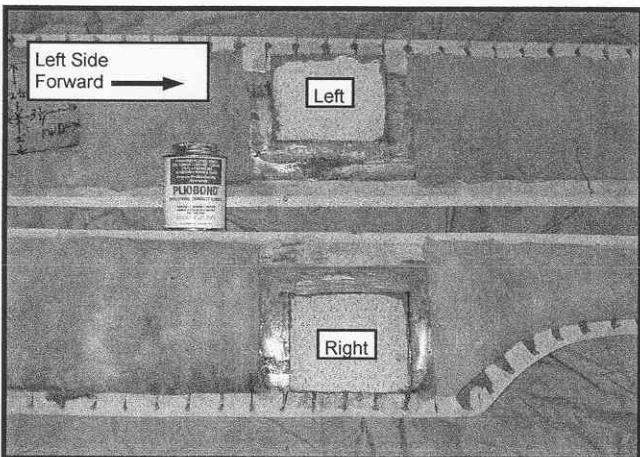


Photo No. 9 Installation Item No. 13

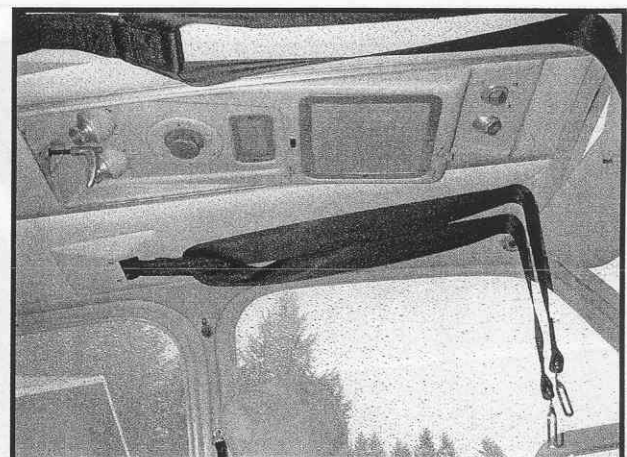
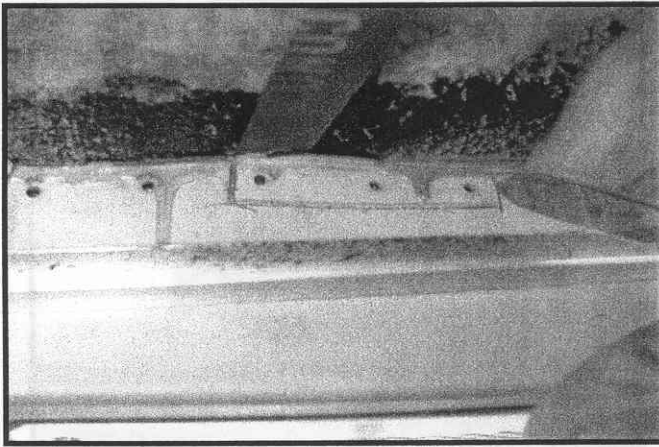
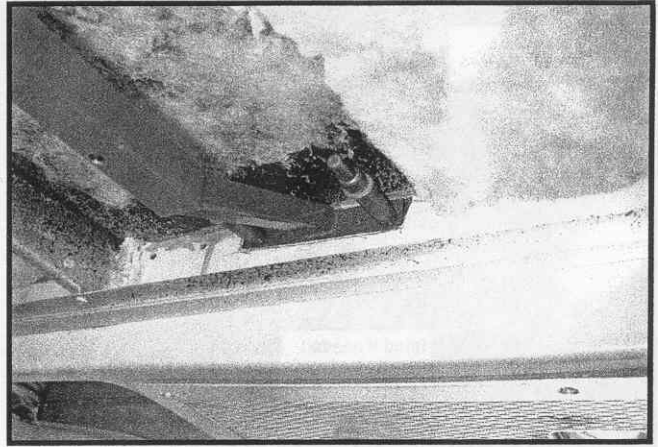


Photo No. 12 Installation Item No. 17

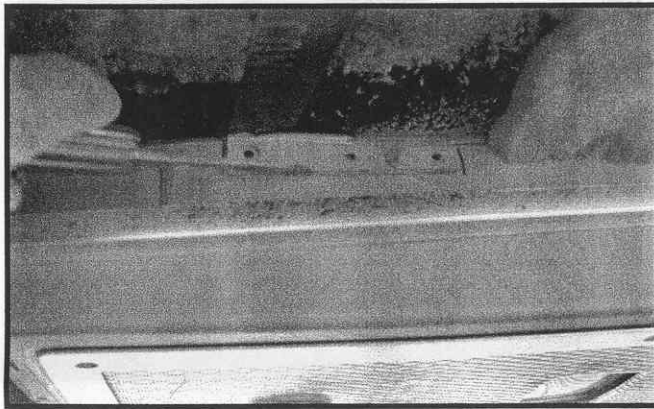
Beechcraft	<h1>Photographs</h1>	Report 1103
		Page 5 of 6
REV B April 14, 2003	BAS Incorporated	Sheet 1



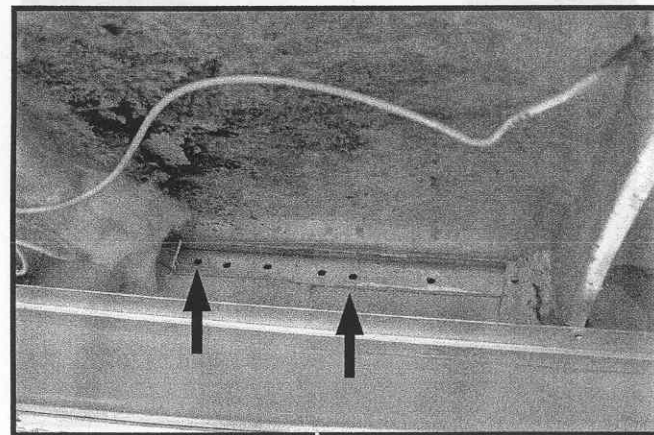
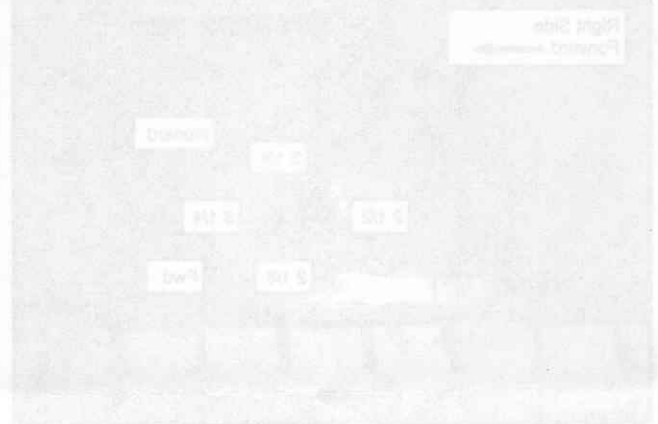
Remove screws that attach plastic air duct where PN 1-Be will be mounted. Carefully pry plastic from angle and cut as shown.



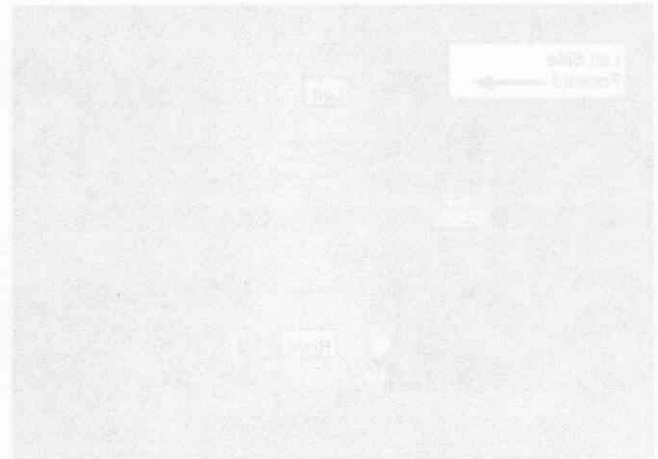
Right Inboard



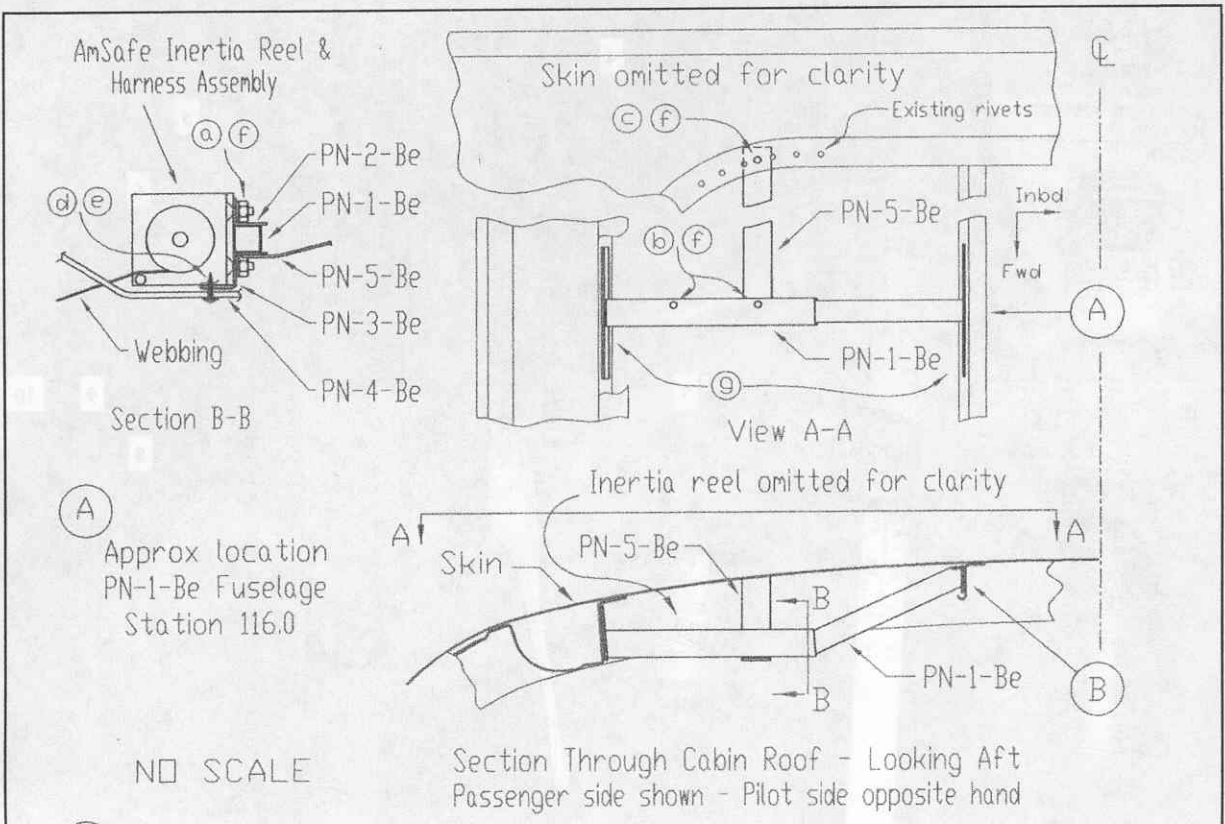
NOTE: Be careful. Don't scratch underlying structure.



NOTE: Two of the holes in PN 1-Be might line up with screw holes in Stiffener. If not, space holes for the best edge margin.



Beechcraft	<h1>Photographs</h1>	Report 1103
V 35 Photo Sheet		Page 6 of 6
REV B April 14, 2003		BAS Incorporated



(A) Approx location
PN-1-Be Fuselage
Station 116.0

NO SCALE

(B) Shim of up to 0.032 max thickness may be used. Contact BAS if greater shim thickness is required.

HARDWARE - Per Side

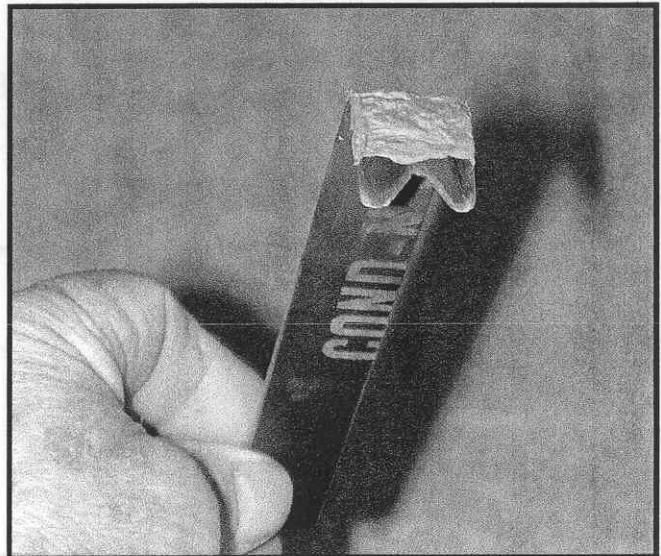
- (a) 4 ea MS24694-S48 flat-head reel mounting screw
- (b) 2 ea AN3-11A bolt
- (c) 1 ea AN525-10R7 structural screw
- (d) 2 ea A1784-6Z1 Tinnerman nut
- (e) 2 ea S4R-6 3/8 sheet metal screw
- (f) 7 ea NAS679A3 nut
- (g) 10 ea CR3213-4-02 cherry rivet
- (h) 2 ea AN960-10 Washers

Rev. Control	REV. A May 1, 2003	Added Item H to Hardware List & Shim Info (B)
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Figure No 1-Beechcraft	<h1>Installation</h1>	
REV A May 1, 2003	BAS Incorporated	



1. #50 Drill Bit
2. #30 Drill Bit
3. #10 Drill Bit
4. Paraffin Wax
5. One 3/16 Inch Cleco Clamps
6. Four 1/8 Inch Cleco Clamps
7. Door Ease Grease
8. 3/8 Inch Wrench
9. 3/8 Inch Socket
10. Special Beech Headliner Tool



Special Beech Headliner Tool made of .050 4130 as shown. I heat treated mine by heating cherry red and quenching in cleaning solvent. **CAUTION:** Don't burn your shop down. Add a little silicone, as shown to protect the paint while prying.