

<b>Revision #</b>	<b>Date</b>	<b>Detail of changes</b>
1	4-9-2009	Original
2	8-15-2012	Addition revision page and document number.
		CAD drawings added.

## 42. Canopy Latches

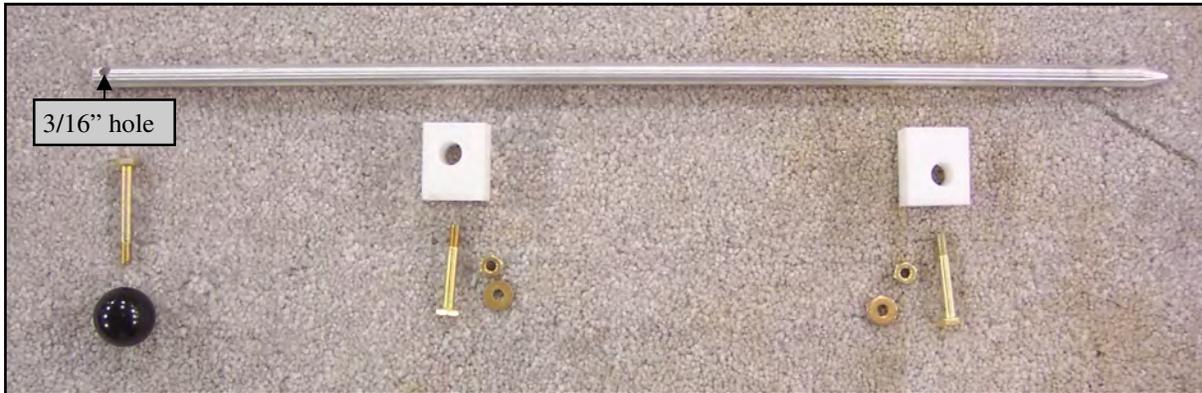


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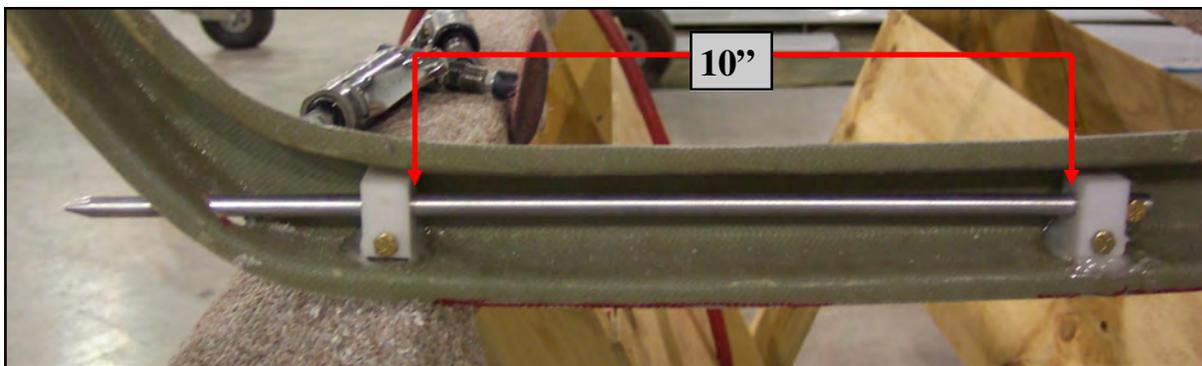
**Required Items:** 36" aluminum 3/8" rod, 2 phenolic balls, 4 phenolic blocks, 6 An3-? Bolts, AN960-1032 nyloc nuts, washers, 5 minute epoxy and flox.

### Canopy Latch fabrication and Installation Serial#1-46

1. Mark the rod at 18".
2. Cut the aluminum rod in half.
3. One end of the rod needs to be tapered to a point, the other end must have a 3/16" hole drilled in it 3/8" from the end. **For best operation the tapered end should be buffed.**



4. The aft block is mounted as far back as it can be before the frame turns up, match drill the hole in the block to the frame. Bolt in temporarily.
5. The forward block is mounted 10" from the aft block. Match drill the block to the frame. Bolt in temporarily.
6. Put the pin in the blocks and mark where the pin will exit the frame, cut the hole for the pin.



7. Disassemble the latches, mix a small amount of 5 minute epoxy and flox mix apply this to the part of the block that will mount to the frame, and some on the bottom. Repeat this for the forward block also.
8. Reassemble the latch, do not tighten the bolts, only make sure that the latch slides freely.

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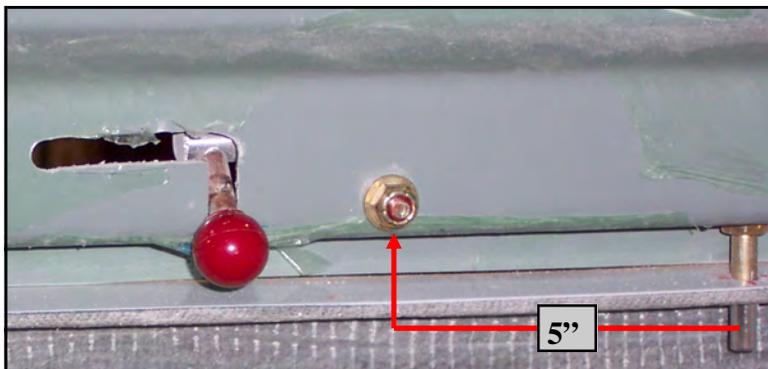


9. When the glue cures tighten the bolts for the final time.  
10. Repeat for the other latches, remember that the 5 minute will cure quickly and it is better to build one side at a time.

11. Cut the canopy knob slide relief in the frame as per the drawing.

12. Make sure the the slot allows the pin to protrude thru the frame 2 1/2".

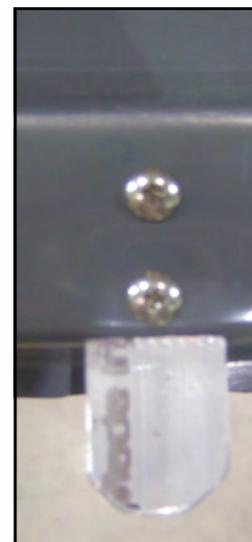
13. This will insure that the pin goes thru the canopy seat and the seat back bulkhead.



### Canopy Latch installation for #47 to current

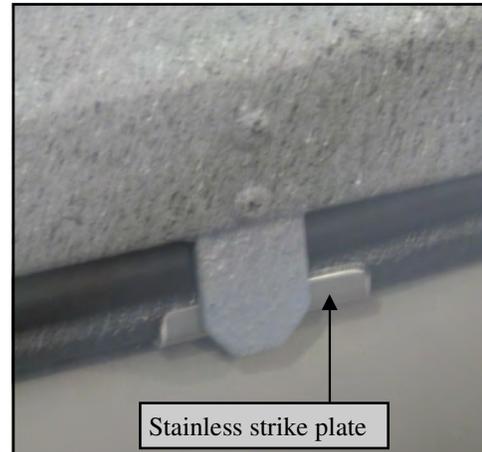
**Required Items:** Phenolic block 1" by 2.5" by 1 3/8", 6" of 1/8" by 1" aluminum stock, Airfoil shaped latch, welded T, handle, plastic washers, 8 #8 by 3/4" screws, #8 nylocs, 5/32" bit, 3/8" bit, #8 tap set, stainless scrap from firewall, 5 #8 CS screws.

1. **Note:** Section 41 canopy hinges must be complete and fitting the canopy frame only from section 43 must be completed before proceeding.
2. Using the 1" wide 1/8" thick aluminum stock, make 2 locating tabs. Use the drawing at the end of this section and the picture to the right as a guide.
3. Install these 25" aft of the instrument panel face on center.



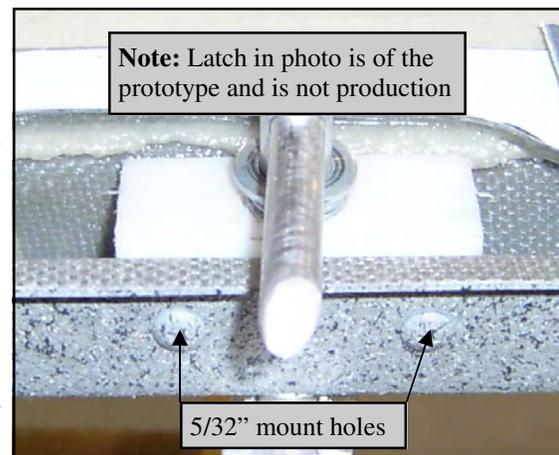
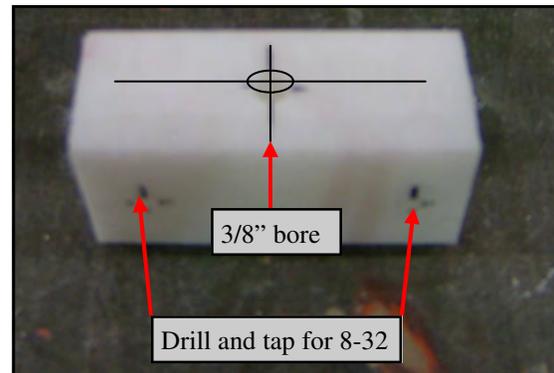
## 42. Canopy Latches

- 4. Using scrap stainless from the firewall, fabricate 2 strike plates for the side location tabs.
- 5. Refer to the drawing in the back of this section for dimensions.
- 6. Install the plate so it is centered on the tab, and is mounted in a way which will push against the tab when the canopy is down.
- 7. Attach to the canopy seat flange with #8 Cs screws and #8 nylocs.



### **Overhead Latch**

- 8. The phenolic latch block is 3" long, 1" wide and 1 1/4" tall.
- 9. Drill a 3/8" bore in the 1" wide part as per the drawing in the back of this section. The drawing shows mounting holes and these are for reference only and are not to be pre-drilled in the block.
- 10. With the canopy frame closed locate the center of the frame in relation to the center of the fuselage.
- 11. Place the latch block on center.
- 12. Mark on the frame 1/2" in from the edges of the block and center top to bottom.
- 13. Drill thru the frame and block from one side to the other with a 9/64" drill bit.
- 14. Remove the block and use the appropriate tap set to tap these holes to 8-32.
- 15. Drill out the holes in the frame to 5/32"
- 16. Reinstall the block in the frame using 3/4" long #8 screws.
- 17. When installing the block put a bed of epoxy and flox on the bottom before installing, and once installed pack some in around the edges, this will make the block very solid when dry.
- 18. Drill thru the 3/8" bore and thru the frame to locates its exit in the frame. This is done so the hole can be drill thru the top when the skins are installed.

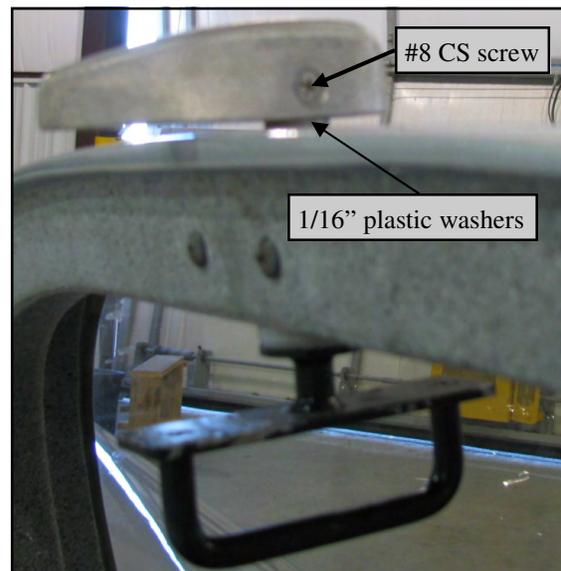
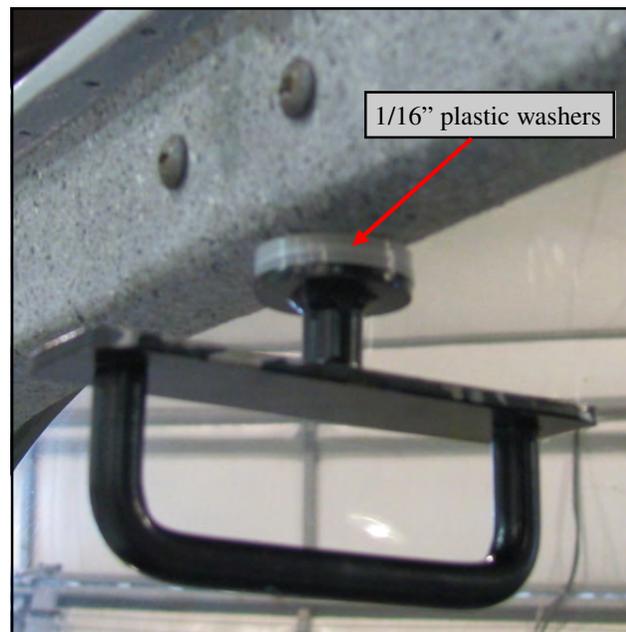
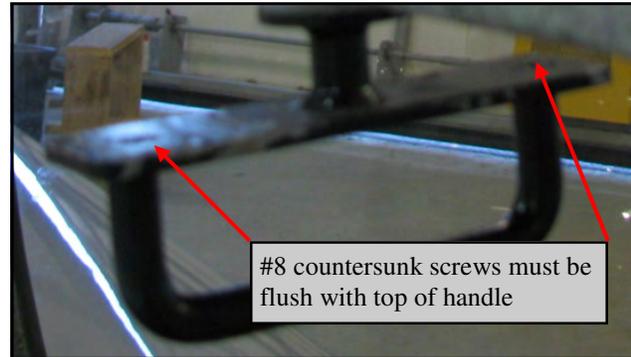


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**Note:** The frame skins must be installed and finished as per section 43 before proceeding.

- 19. Assemble the pre-welded latch to the provided handle
- 20. The handle must be centered in each direction, drill the latch with a #20 bit where it attaches and countersink the holes.
- 21. Install 1/2" #8 screws thru the latch into the handle and use some loctite 242.
  
- 22. Drill thru the frame and outside skin with a 3/8" bit using the previously drilled hole.
- 23. Slide the latch assembly thru the frame, there are different thickness plastic washers provided to set the depth of the handle relative to the fuselage. You may need 3-4 of these depending on your fit.
- 24. The latch must be fully seated against the frame.
  
- 25. Place 2 1/16" thick washers on the outside and then slide the Aluminum handle down on the latch.
- 26. The latch and handle should be in-line with each other.
- 27. Mark the hole in the handle to the latch.
- 28. Remove handle and latch assembly.
- 29. Drill the latch with a #20 bit.
- 30. Drill all the way thru the handle with a 1/8" bit.
- 31. Tap the opposite side with the appropriate #8 tap set.
- 32. Re-install the latch and washers as before.
- 33. Install the aluminum handle and run a #8 Cs screw thru the handle with loctite 242.



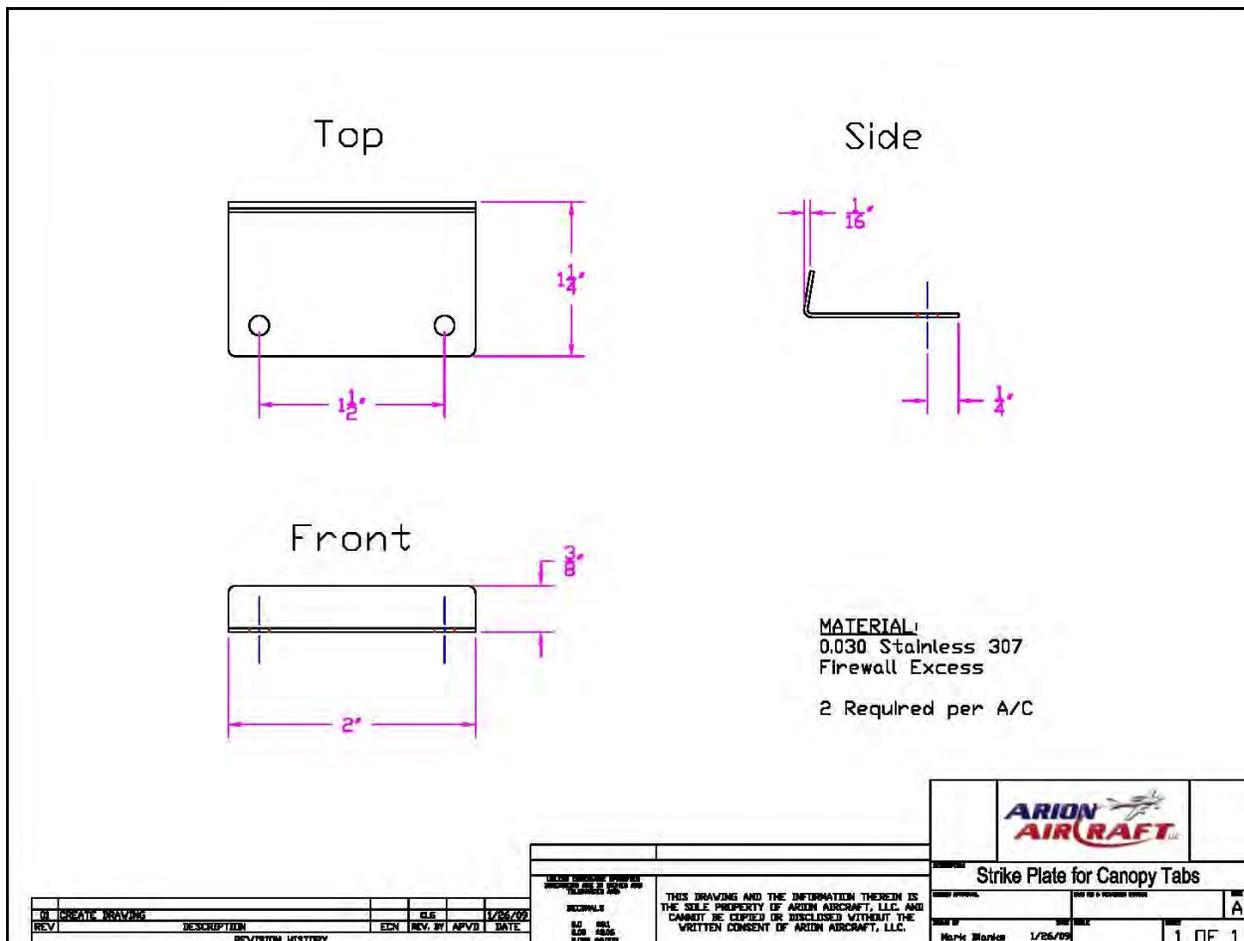
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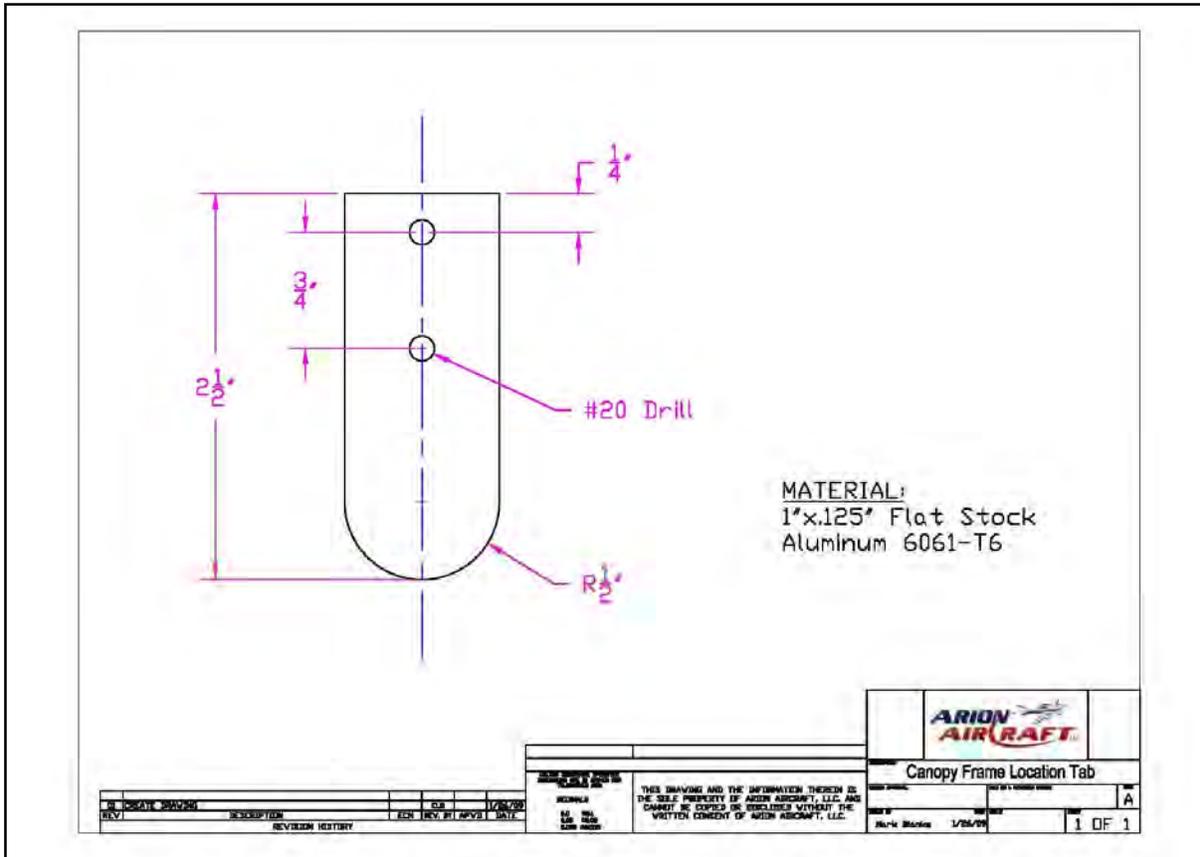


- 34. Fabricate the latch strike plate as per the drawings as the end of the section.
- 35. Close the canopy with out the gasket in place.
- 36. Place the latch in the closed position.
- 37. Measure from the flange on the fuselage to the top of the latch.
- 38. This will be how far down the strike plate must be placed to get a good seal.
- 39. Clamp the plate in place with the bottom of the plate as this distance, match drill the 4 mounting holes to #20.
- 40. Countersink the holes and install 1" long #8 CS screws and #8 nyloc nuts.

### Drawings for fabricated parts in Section 42 Canopy Latches

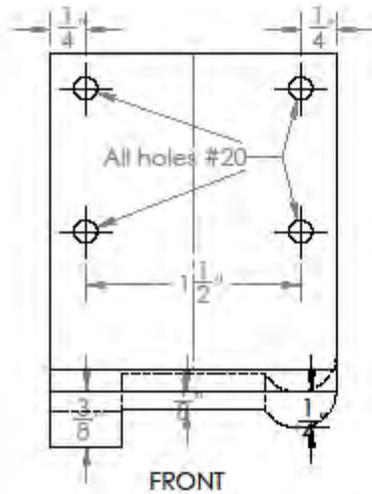


# 42. Canopy Latches

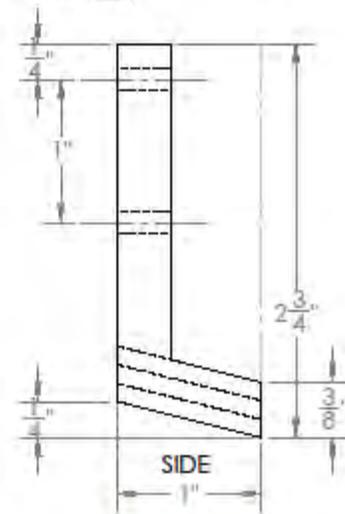


Canopy Latch Block  
 2" x 2 3/4" x 1" acetal block

C: Drill mounting holes last



A: Cut part as shown in side view - first



B: Machine block to this views - second

