Getting Hinges Bonded to the Ailerons

Wayne Hicks: (VA) - Chapter 19 includes a rather vague process for attaching the wiggly things (ailerons) to the wings, simply saying, "Apply bondo to the aft hinge halves and place the ailerons into position on the wings." Okay, but with the ailerons in place, you can't get to the hinges. So, how in the heck do you press and hold the aft hinge pieces flush against the ailerons while the bondo cures? It's clear that builders are left to their own accord to devise a clever method.

Suggested tricks include things like tape, toothpicks, sponges and springs. I'd like to add one more, hacksaw blades!

As it turns out, a hacksaw blade slips perfectly between the hinge joints. By inserting it about a half inch under the opposing hinge piece (the piece that will attach to the aileron), you can use the springiness of the blade to press and hold the aft hinge flush against the aileron while the bondo cures.

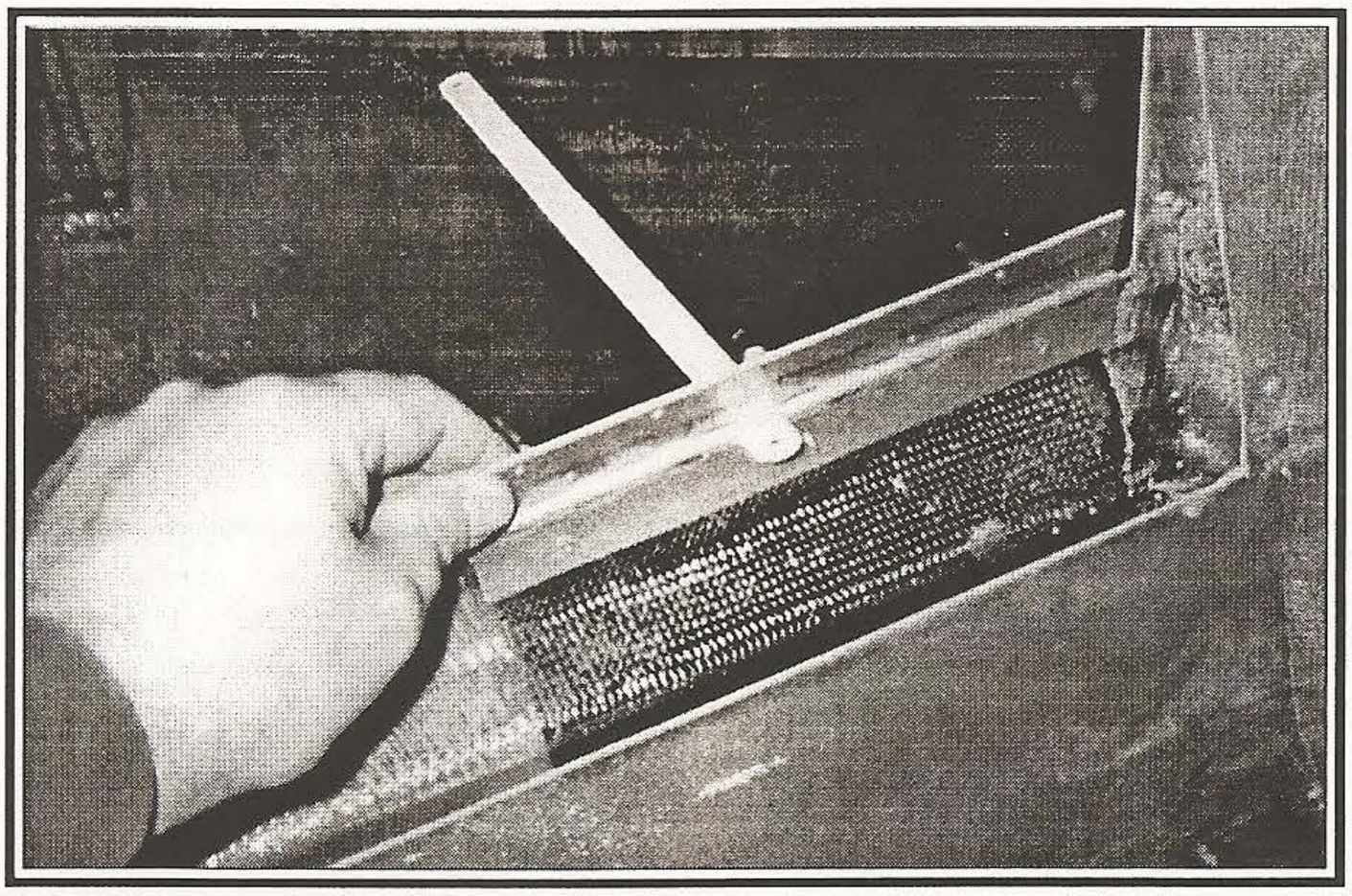
Here's the process:

Set the wing leading edge down and trailing edge up. (I have cradles)

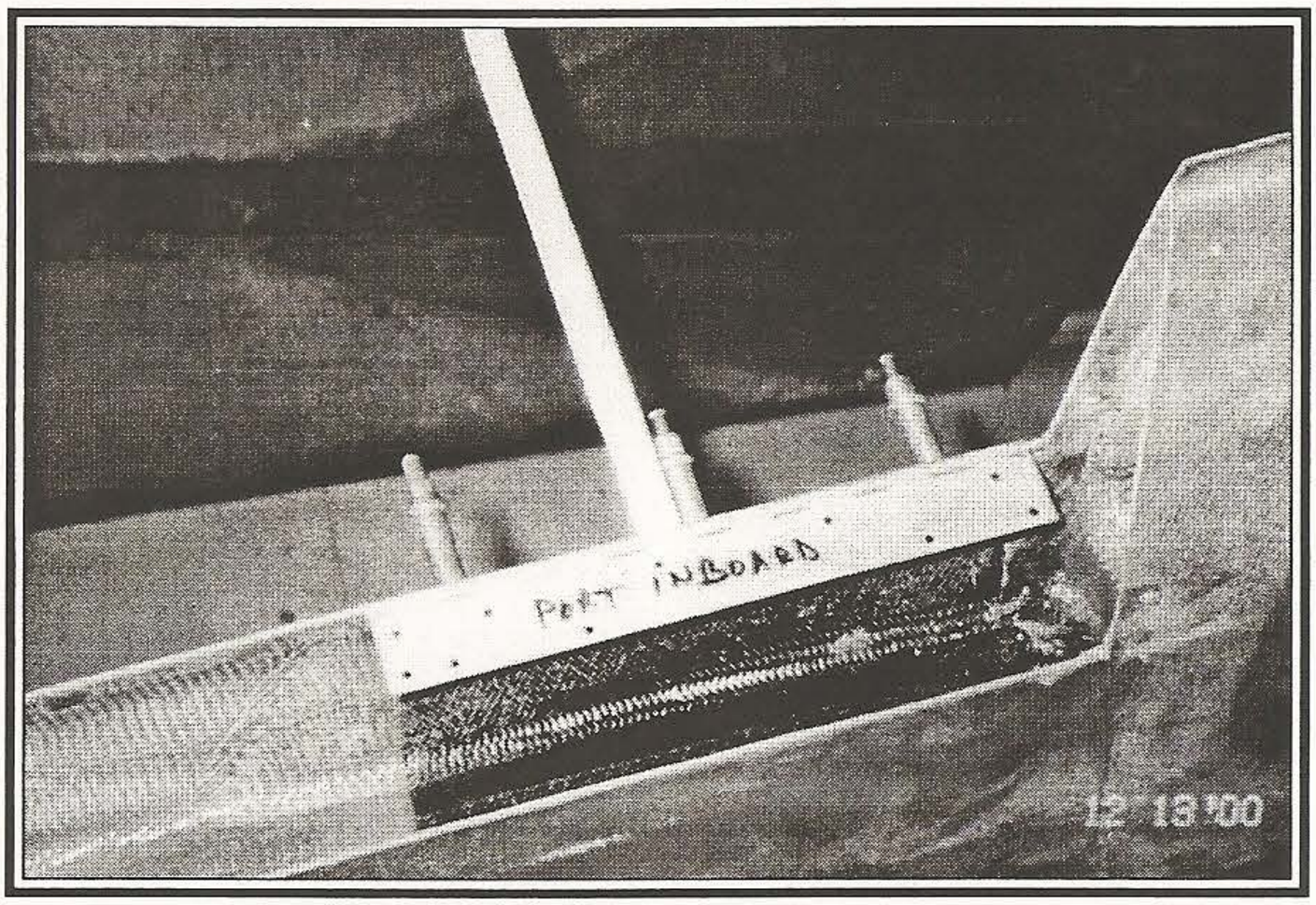
Jig up whatever Rube Goldberg apparatus you need to position and hold the aileron into place during the bondoing/5-minute gluing step later. My set-up (pictured to the right) included clamps and mixing sticks for matching the aileron trailing edges and skins to the wings. Trial fit, and when you are happy, remove the aileron.

Cleco the hinges onto the wing trailing edge. The plans say to use screws and nutplates, but clecos are more convenient, especially for removing the hinges from the wings without disturbing their positions on the ailerons.

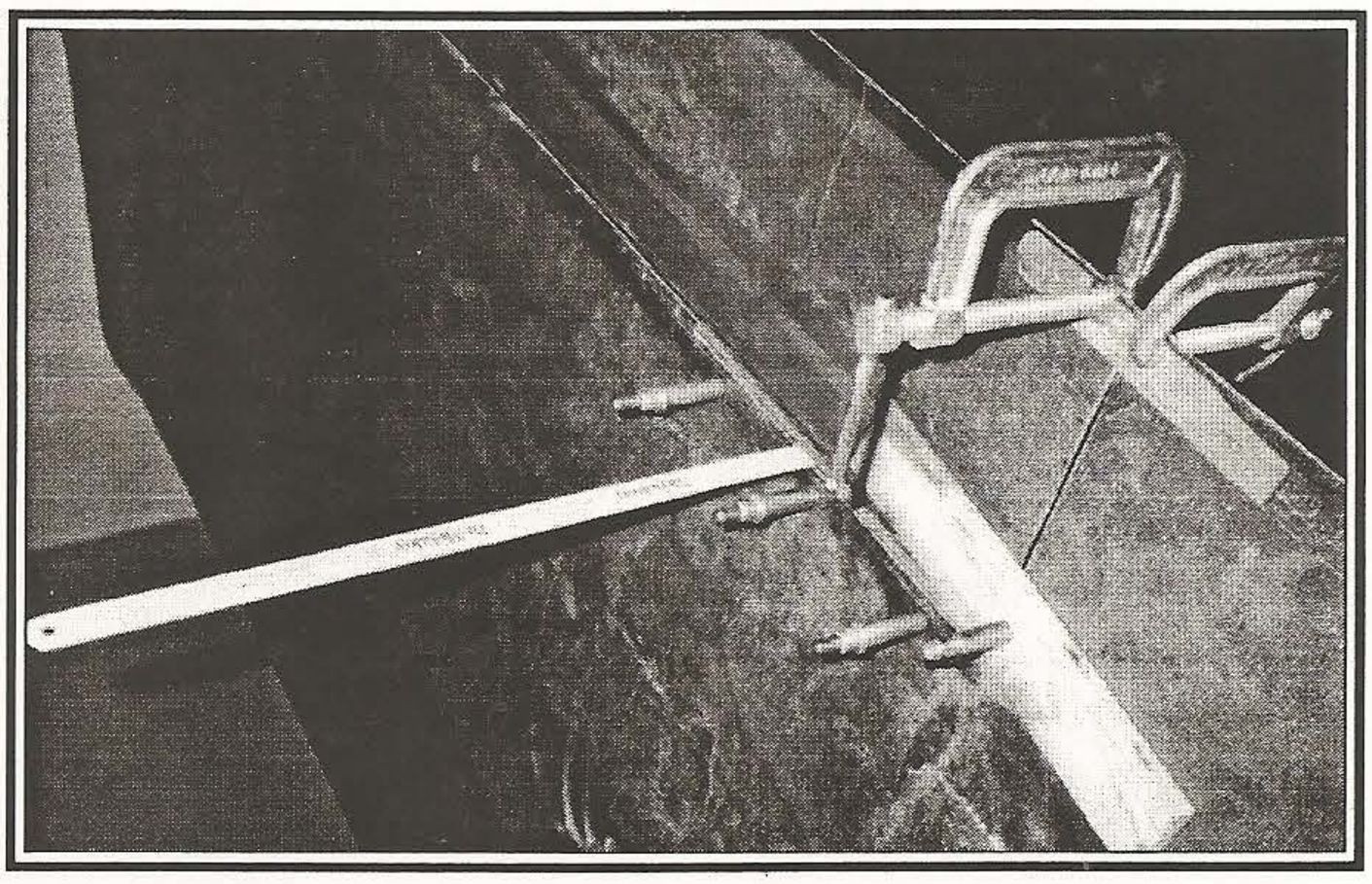
Use one hacksaw blade per hinge. Slide the blades between the hinge joints and insert them about a half inch under the opposing hinge piece. You'll know you've done this correctly be-



Saw blade can hold the hinge against the aileron



carbon stiffens trailing edge to prevent bending



clamp to align with the wing skin

cause the opposing hinge piece will go from hanging to horizontal.

Put a few dabs of 5-minute epoxy onto the opposing hinge pieces. I used 5-minute epoxy instead of bondo because the epoxy is more fluid, and the spring action of the hacksaw blades compresses the epoxy better than the bondo.

Work quickly and set the aileron into place. The hinges will be depressed as you do this and the hacksaw blades will rotate upward as the aileron is lowered into the wing. Eventually, the blades will stop rotating and will begin to apply pressure to hold the hinge pieces flush onto the ailerons.

Wait for the epoxy or bondo to cure. Remove the clecos. Remove the Rube Goldberg stuff. Drill the hinges.

Be careful not to overdo the hacksaw blade thing. If you slide too much of the blade under the hinge, the spring force may be too great and cause the aileron to bend (especially at the middle hinge). If this occurs, simply pull some of the blade out.

RAF Plans Changes, Man. Ground, etc on-line

Marc Borom (AZ) – Joe Masone put together a list of all Long-EZ plans changes through CP# 54. I put his list in an Excel file which, can be sorted by chapter or type of change (e.g. mandatory) or how ever you wish. THERE IS NO GUARANTEE THAT THE FILE IS EITHER COMPLETE OR CORRECT (but I think it is). I have converted the Excel file into a web page:

http://www.dreamwater.org/marcborom/LongEZfiles/LongEZ%20Plans%20Changes.htm

Tim Crawford (ID) - I updated Marc's e. As I work on things, I will make additional changes.

If you are interested, it is at http://www.noaa.inel.gov/capabilities/longez/LongEZPlansChanges.htm

Possible FOD on Props?

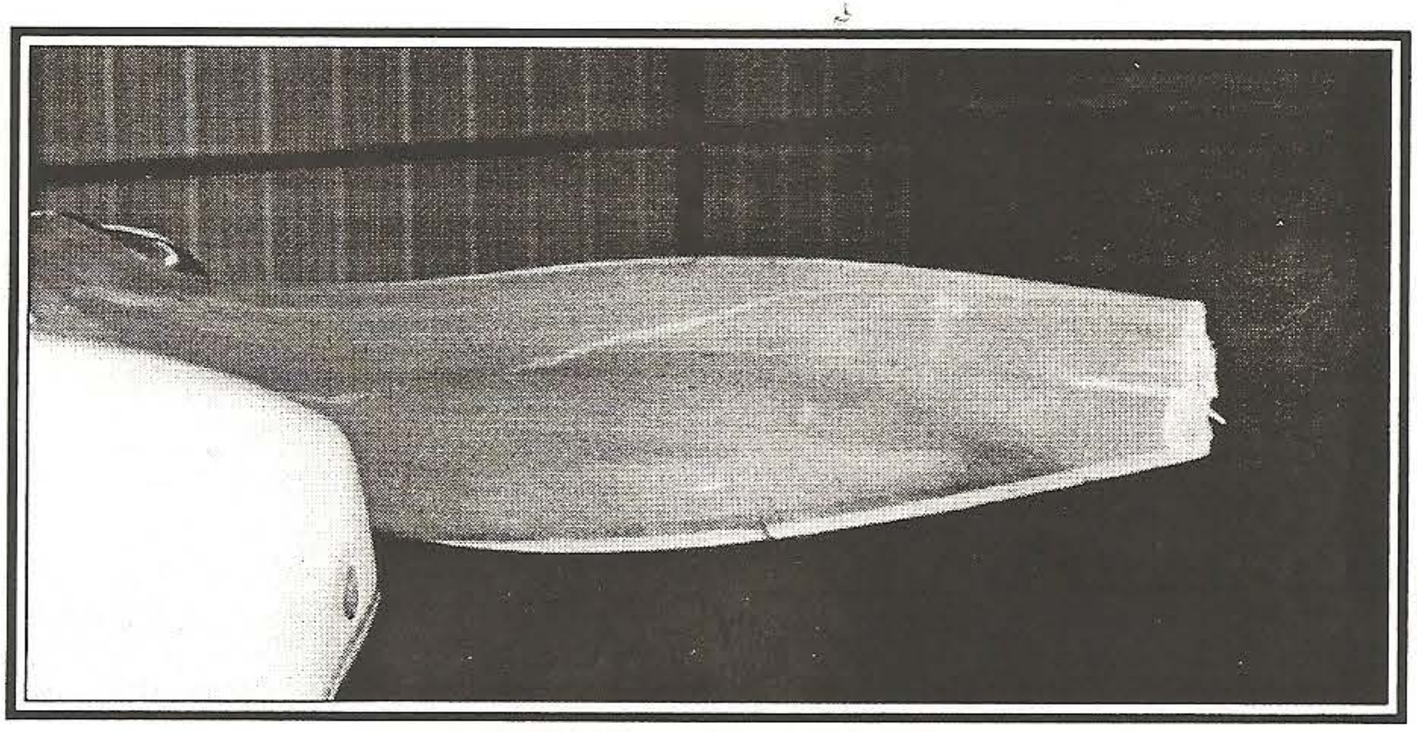
Joe Rosa (MO) – I had a Hendrickson prop break recently. I have no explanation for the failure. Looking from the rear, it was the left tip and it broke off cleanly 3.5 inches with no split on the rest of the prop. It happened after take off; I had already started my turn in the pattern to depart the airport area. I was lucky that I had sufficient altitude to continue around in the pattern at reduced power and return to mother earth. The damage was not caused by anything I picked up from the runway. There is no visible damage to the remains of the prop.

The first indication was a shuddering like a car running over a washboard. With a reduction of power, the vibration ceased; I continued flying back to the runway. All's well that ends well. The only advice I can give is simply the old adage "continue to fly the airplane"

Gary Hertzler's prop care instructions suggest prevention is the key to avoiding prop damage.

Most prop damage can be prevented with a few precautions.

Never do full power run-ups. If this is necessary to check engine operation, sweep the ramp area first.
On take off, apply power gradually so that you achieve full power after the first 100 feet of take off run.
Use a slick nose tire. These can be purchased from Ken Miller - KenEZMiller@Compuserve.com
Taxi with your landing brake down.



Aileron Torque Tube Bushings

Ken Miller (NY) - Sometimes the controls feel loose or even sticky in an EZ. This is frequently caused by the phenolic bearing blocks.

If you installed the plans phenolic "bearings", do yourself a favor. Go to the auto parts store and buy a pair of GM brake pedal bushings off of the "Help" rack.

Trim the length of the plastic bushings to slightly less than the thickness of the phenolic, then punch the 5/8" holes in the phenolic up to 11/16" using a Unibit. Insert your bushings.

As you re-assemble the system, check for freedom as you attach each component. I have this system, and my ailerons have "0" drag. I also omitted the plans roll trim springs and shimmed my wings until it flies hands off.

Nose Gear Actuator Grease

<Canard.Com>

Larry King (MT) - I found an open gear lubricant called ER Energy Release at the local NAPA store. This works very well on the nose gear retract system. It takes any chatter out of the gear. It is a clear gear and chain grease.

If they don't have it you can call 1-800-234-6437 for a source.