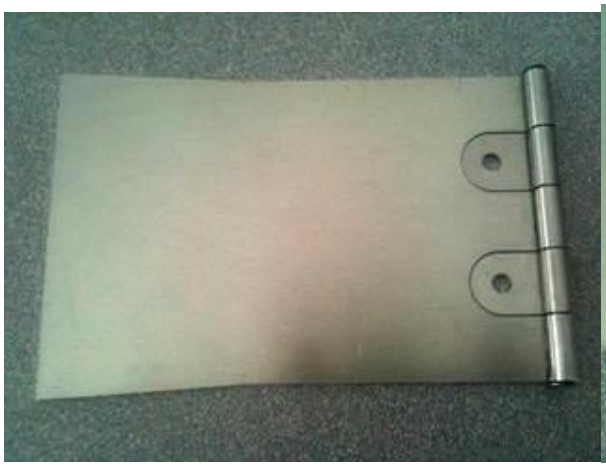
Cessna 120/140
Upper and Lower Door Hinge Blanks

Because of severely worn and cracked door hinges on Cessna 120s/140s, I have designed and had manufactured upper door hinge blanks. I have also located a source for the original lower hinge material.

Upper Hinges

The stock upper hinges tend to wear in two ways: 1) the hinge pin wears the thin aluminum of the hinge eye, sometimes to the point of the hinge eye breaking away and 2) cracks often develop in the square corners of the hinge, as shown in the photo below.

Below is a photo of the new door blank as delivered, made from .062" 5052-H14 aluminum, with a rolled hinge eye and a captive .125" diameter stainless steel hinge pin (upset on both ends). The blank has the two small hinge lobes sized and located the same as in the stock hinges, as shown in the second photo.



The blank is designed so that your mechanic can fabricate either a right-hand or a left-hand upper hinge from it, using existing old hinges as patterns. The resulting new hinges can be match-drilled and riveted to the door, maintaining the hinge line geometry.

The photo below shows a new left-hand hinge cut from the blank as compared with a stock unreinforced (early configuration?) hinge.

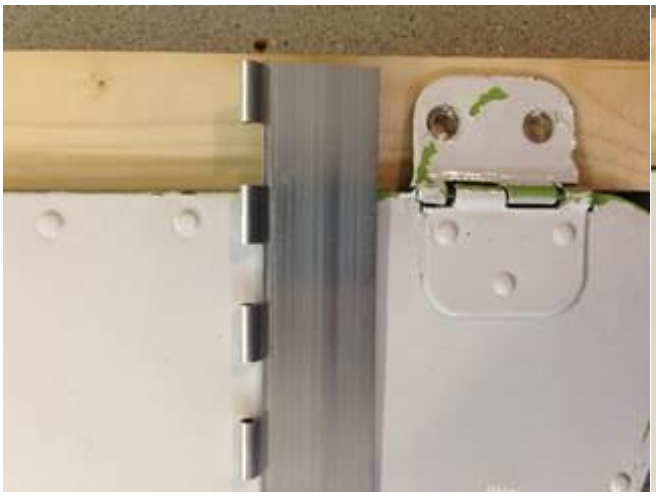
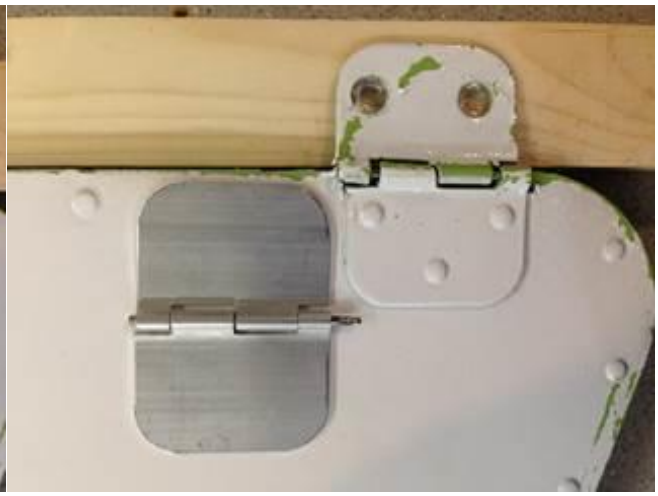
The photos below show a new right-hand hinge reinforced with an added plate, similar to the way some (later configuration?) stock hinges were built. (However, the reinforcing plate used in the stock hinge was spot welded in place; cracks tended to develop at the spot welds.)

Upper door hinges made from the new blank offer the following advantages:

- Thicker material than stock hinges--.062" versus .050"--resulting in less tendency to wear and crack.
- The small hinge lobes are rounded (as compared with stock hinges that have square corners), resulting in much less tendency to crack.
- Ability to add a reinforcing plate if desired--a better way than with reinforced stock hinges--resulting in even less tendency to crack.
- Larger hinge pin diameter--.125" versus .093"--resulting in more bearing area to improve both radial and axial hinge wear.

Lower Hinges

Wear on the stock lower hinges is similar to the uppers. In addition, axial wear on the hinge lobes allows the door to sag downward downward. The photos below show an original axially- and radially-worn hinge. The left photo shows a section of the hinge material as delivered; the right photo shows a new lower hinge your mechanic can fabricate from the hinge material to match the original.

Pricing is as follows:

- A set of two upper blanks—enough for both right and left upper hinges on an airplane—$100.
- A length of lower hinge material—enough for both right and left lower hinges on the airplane- $50. Includes a length of MS20253-P2-7200 hinge pin.
- Shipping- $7. Covers both uppers and lowers if ordered together.
- Delivery is approximately one week after placing your order.

Note that these blanks are not FAA-PMA approved—however, your mechanic should be able to install them as a minor modification.

If you are interested, please phone me at 770-548-1206 or send me a PM (Membership ID 6999).
Thanks!
Mike Huffman