

The Upwind Flyer

Your *Scentinel* for Chapter Happenings

December 2020



Ray Scholar Flies Solo

By Mehmed Uludag

When my instructor asked me, “Do you want to solo?” on November 18, I felt like I had been hit by a truck. We had just done a couple of pattern flights and were taxiing back to the hanger when he asked me this question.

Not that I wasn’t ready for it- I was more than ready for it, it was certainly a long time coming and I really wanted to get it over with. It was not much of a surprise either, we had scheduled to do our Solo that day and he had hinted towards it during our pattern work earlier, such as asking me if I was



comfortable doing my solo in a crosswind like the one we had that day and giving me tips for when I do my solo like announcing I was a student pilot to the Ground Control and Tower when contacting them. It was the first time I was going to do something like this, and as I was thinking about all of this, I blurted out, “yes, absolutely!”

Before I knew it, my instructor jumped out of the plane, and said, “make three trips and I’ll see you when you land” (This part is a bit exaggerated of course, he was much more reassuring than that). And so I was off, I completed three full take-offs and landings, without any problems other than a few gusts of wind during some of them, and that is the story of my first solo flight!

It was an incredible experience, the thing I was most surprised about looking back, is how empty and big the plane felt when flying alone. That has been my greatest accomplishment, thus far into my training and my next steps are studying for the FAA written exam, tracking more solo hours and cross-country flying.

President's Log

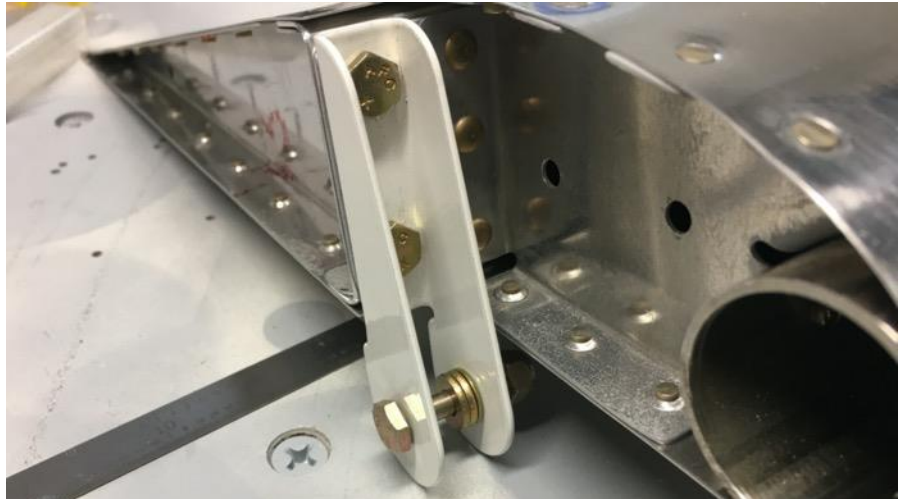
By Eric Gettel

Here it is December already in a year that never seemed to get started. While the cancellation of AirVenture was a shock at the time, the memory seems distant. I've moved on to other things and it doesn't sting so much anymore.

Having said that, I have missed the usual routine of our monthly gatherings in the terminal building. Meanwhile, the initial clumsiness of Zoom meetings has grown into something resembling normal. I'm proud of our efforts to keep the club active in the face of these challenges.

I've been able to keep the RV-9A project moving forward. I'm not an engineer and I hear that the RV series of aircraft are reputed to have little or no adverse yaw. And so the question is how do they do that? I don't know the answer off the top of my head, but I can study a

handy set of hardware. The ailerons have a pivot point is well below the airfoil. I don't know what it does, but I know that the 172s I fly are hinged at the top of the airfoil and that they are also a



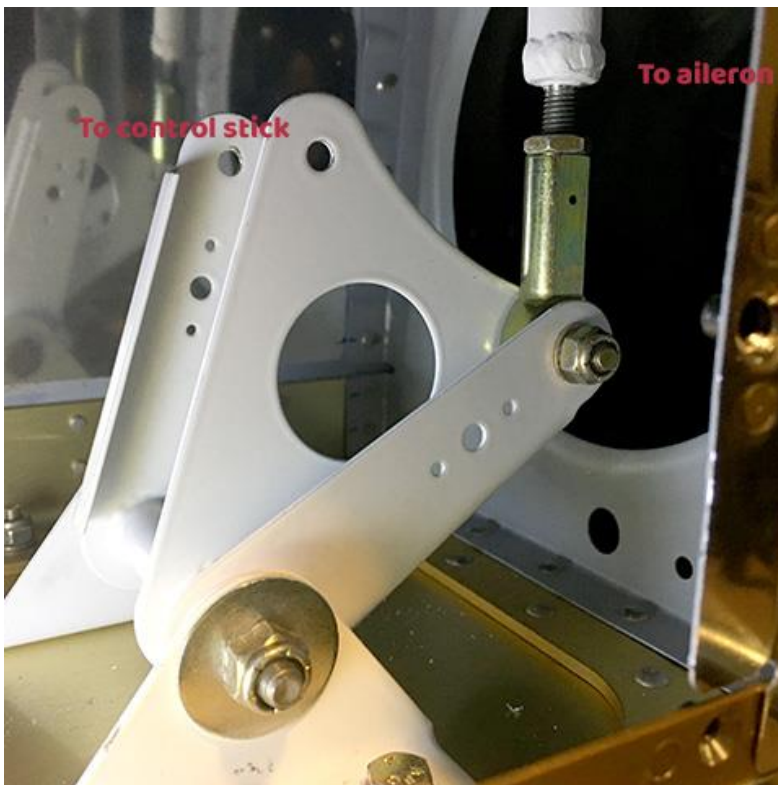
Outboard bracket on the right aileron of an RV-9A note the pivot point below the airfoil.

good example of adverse yaw.

The RV-9A aileron system is fully actuated by pushrods rather than cables. One feature, I'm sure is featured on other aircraft, is that the aileron travels upward 2x the distance it's partner travels downward. How do they do that? I think the secret is in the bellcrank.

A bellcrank allows a control system to turn a corner. A basic bellcrank is shaped like a capital L. The vertex of the L is the pivot point and the pushrods are connected to the legs of the L. If the arms of the bellcrank are equal in length *and* perpendicular to the pushrods, then a simple 1 for 1 movement results. However, the legs do not have to be perpendicular, and if not perpendicular, then the 1 for 1 movement changes by the cosine of the angle (I guess).

You can see that a lot of math has been involved in the development of the V-shaped RV-9A bellcrank. The control stick arm is nearly perpendicular to the pivot point while the aileron arm is not. It is actually pretty easy to see that the aileron arm will have a larger movement downward given a control stick movement to the right than an equal and opposite movement to the left. These people are far more clever than I am.



RV-9A aileron bellcrank in approximate neutral position. The control stick's pushrod is not attached but will come in from the right through the lightening hole in the rib.

Keep Your Head in the Game



IMC Club is hosted by Will Minette every 4th Tuesday of the month at 7pm.

Next Meeting November 24

One-click links to virtual meetings are sent a day or two before the event.

**President
Eric Gettel**

**Vice President
Beth Wichterman**

**Secretary
Larry Sissom**

**Treasurer
Renaud Guibert**

Calendar of Events

For 2020, the chapter has realigned its meetings schedule to fall consistently on the second, third, and fourth Tuesday evenings of most months.

Links for all internet meetings will be delivered via email closer to the event date.

Dec 8 Chapter Gathering, 7pm

Dec 15 Business (Board) Meeting, 7pm
via internet.

Dec 22 IMC Club, 7pm via internet.



Disposable face masks are stored in the same drawer as the Young Eagles logbooks. Free if used for a Young Eagle or Eagle flight. Otherwise \$1 donation requested.

Links:

EAA Hosted Builder's Logs
eaabuilderslog.org

Chapter 333 Website
eaa333.org