

## ***The Newsletter of the Portland RVators; Builders and Fliers of Van's RV Series Aircraft***

### **October Meeting**

The October Meeting was at the site of Dick Zander's RV-6A project. Dick has his fuselage skeleton in the jig, with the longerons, bulkheads and Firewall cle-coed and clamped in place. I for one was very interested in having a look, as I'm just now finishing up my firewall. Dick started his project in April of 1994, so he's moving right along.

Turnout was a bit light, probably around 30 people. Which was just as well, as Dick's shop is a single car garage, and he has his fuselage and wings in there.

But that's not all – someone showed him why his fuselage was crammed so far over to the side of the garage, and he told us he actually keeps his car in there when he's not working on the plane. What a concept!

Much of the discussion centered around Steve Moseley's fatal crash the weekend before. I didn't know Steve well but it was obvious to me I'm not the only one who feels it when something like this happens to someone in our "circle". Dick also told us how Ron Gray is coming along - Ron is an RV-6 builder from Vancouver who was burned severely after surviving a stall/spin accident in a Kitfox he was riding in as a passenger. Ron is recovering, and I look forward to seeing him at a Builder's Group meeting soon.

### **Meeting Notice**

*Frank Justice, Meeting Coordinator (503) 590-3991*

Place: Mike Wilson's 35465 Firway Lane, Sk Helens  
 Date: Nov; 9,1995 (2nd ThursidayGf the mortth)  
 Time: 7:00pm Phone:397-6207

The next meeting of the Portland RV Builders' Group will be held at Mike Wilson's place in St. Helens on

Thursday November 9. Mike is building an RV-4, has his fuselage framework complete in the jig, and is attaching the skins.

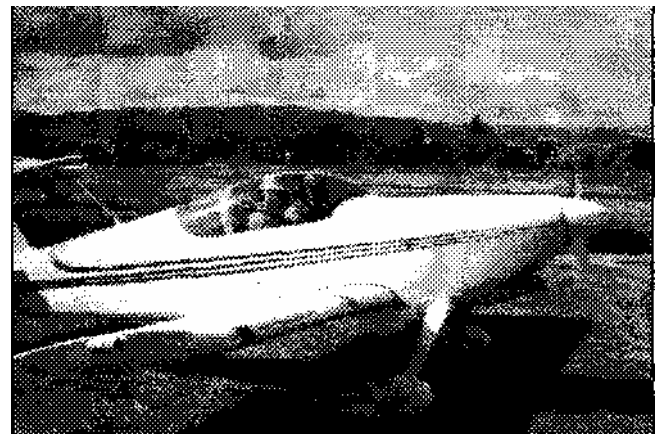
To get to Mike's house, go out highway 30 north-west past Scappoose. Just past the Les Schwab Tire store at St. Helens find Firway Lane and turn west (left turn if coming from Portland). Go to the white house all the way at the end of Firway.

### **From the "Big Ugly"**

*Randall Henderson, Editor*

### **Another Great EAA Breakfast**

The EAA Chapter 105 First Saturday of the month breakfast is becoming quite an event. Last month's was no exception, and it brought a number of interesting people and planes, including several Kit Foxes, a Super Cub or two, Tri-pacers, assorted Spam Cans, and of course the usual good turnout of RVs.



Chris Lund hitches a ride to Gold Beach with Dan Delano

Shortly after arriving in the Champ, I was approached by Joel Haugen and asked to give a young eagle's ride, which is always a good time. I took one kid up, and he had a blast, but his friend turned down a ride in the Champ. Shortly thereafter I saw the little

devil climbing into the RV-8. really Oh well, you can't blame him....

After the young eagles ride, I took one of the chaperones up, and her reaction - one of wonder and awe at the beauty of the morning and our ride in it, which she summed up with a heartfelt "I'll remember this for a long time..." was really special to me, as it is not all that often that you find a non-pilot who can put away the fear and see it as through your own eyes.

After the breakfast broke up, Chris Lund ran by me saying "gotta go — hitched a ride with Dan Delano to Gold Beach!" Don Wentz, Bill Benedict, and several other RVs were seen headed that way as well.

Rion Bourgeois negotiated a ride in a KitFox, and he and I eventually ended up over at Olingers, helping Jerry VanGrunsven hang his new Hangar door, and Doc Melvin un-crate and jig his fast-build P51 wings. Judy, Stan and Eilene, and Harmon Lang were all there as well, and Ken Scott showed up in time to help with the "door raising".

Funny how sometimes all you have to do is show up at a pancake breakfast on Saturday morning, and fun things just seem to happen by themselves.

**Beginners Tips**

Someone mentioned to me recently that as much as they like the newsletter, they wouldn't mind seeing more info and builders tips that apply to the basics of RV building. It's true that the level of stuff I write about has kind of followed my progress with *my* plane — well that's what you're going to continue to get unless *you* start submitting tips!

But don't think I haven't heard what you're saying. I know there are a lot of new builders in the group and I will keep my eyes open for any information that could be of use them. Check out the builders tips this month.

The back issues of this newsletter can also be a good source for obscure tips and tricks at all stages of building. Carl Weston is the newsletter Archivist and will make copies of back issues for you. His phone number is 649-8830. I also have extra copies of some of the old issues, I'll try to start bringing them to the meetings.

**Top Ten List**

*This month's top ten list comes from Kevin Lane:*

**TOP TEN DIRTY TRICKS TO PLAY ON AN RV BUILDER**

10. Send him a notice on Van's stationery telling him that all future kits will be tooled in metric

9. Shuffle all the labels on his rivet drawers

Change all the threes to eights on his plans

7. Paint all his 1/8" clecos silver

6. Send him a factory recall for all 2024 Alclad

5. Notify him of a hostile take-over of the builder's group - by Lancair people

4. Add a big ugly III to his garage — he'll spend all his time trying to figure out what to do with all that extra space

3. Re-wire all his tools so they run backwards

2. Notify him that the FAA has revoked his certificate, but that F. Lee Bailey has agreed to represent him

1. Tell him that while he was away on vacation everyone else in the builders group completed their planes and he is the only remaining member

**Subscriptions Due:**

Look at the date under your address on the cover. **THAT IS THE DATE YOUR \$10 IS DUE.** Mail to me or give it to me at the next meeting (my address is the return address on the cover). If you are paid up but the date doesn't reflect this, please give me a call so I can correct it.

... tell jne Irv, have you decided to build the 6 or 6A yet?



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Kevin Lane

**EVENTS CALENDAR**

**EAA Chapter 105 Meeting** Thursday, November 16 (third Thursday of every month) 7pm at Twin Oaks Airpark. This month's program will be Jerry VanGrunsven, talking about the advanced electronics systems in airliners like the A-300.

**EAA Chapter 105 "Breakfast at the Aileron Cafe"** Saturday December 2, (first Saturday of every

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month) at Twin Oaks Airpark, Sam. All the grits you can eat!

**EAA Chapter 105 Christmas Banquet** Friday December 15, 7:00pm, at McMennamins Beaverton Mall. Evert Eyres 648-3564 for tickets.

**Oregon Air Fair** Friday, Saturday, Sunday December 8-10, at the Portland Convention Center. Volunteers needed to man the EAA Chapter 105 booth and the kiddie simulators. Call Rion Bourgeois, 646-8763.

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**Carl Hay's New RV-6**

*Randall Henderson*

Many of us are familiar with Carl Hay and his RV-6, which he has been flying un-painted for about a year and a half now. Well, Carl finally bit the bullet and took his baby out of the sky long enough to put some paint on it, and it looks n/ce!

Carl decided to have the painting done by a professional shop, and he went with Aero Air, which is just down the line at Hillsboro. Being a business aviation outfit, Aero Air mostly maintains and paints much bigger airplanes, and this was a bit of an experiment for them. Carl did most of the prep work, including finishing fairing in the fiberglass wing and tail tips, partial disassembly, and smoothing out some of the various dings he's picked up from flying to Baja and the like. All in all he says he spent around 120 - 150 hours just getting prepped for painting, but most of that was on and off while he was still flying it. Aero air then took the plane and stuck it in a little corner of their HUGE paint booth (one half of the booth was partially taken up by a Mitsubishi MU-2), and went at it. One of the painters told Carl that it was kind of fun to paint a plane that didn't require scaffolding for a change. He also said it was nice not having to strip it first, as a lot of the work they do is re-paint jobs.

The cost they agreed on was \$2500 — plus. Actually Carl says that's not the final price, as he had them do some extras, and they may have to negotiate a few things that he wants re-done.

The color is off-white, with metallic "Ruby Red" and "Tibetan Gold" striping. At the tip of the stripes on the fuselage is nice, rather unique detail, a Native American symbol for a butterfly, in gold, red and blue. Carl started to tell me how it holds deep symbolic meaning for him, but finally admitted he just saw it in a book and like the way it looked.

Carl got the plane back together November 2, and flew it November 3. All told it was down for just over 2 weeks. He was anxious to find out whether the paint added any speed gains, and his first tests indicated that it did - 3 to 4 miles per hour. Not bad, considering that it looks good too!



Carl puts things back together preparatory to flying his "new" RV-6

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**Fuel Scan**

*By Don Wentz*

I have been flying the new FUELSCAN original BETA unit for a couple months now, over 30 hours. I have to say that, even though there are some 'tweaks' in progress, for a first unit effort, this has been a great piece of equipment. For a unit to be so close on the first try, having not had an opportunity to test fly it himself first, Matt Dralle must have really thought about it a lot.

So far the unit has been completely without breakdown, and except for some 'stray fuei-iube' in the sensor (my fault) has been very consistent and accurate. My fill-ups seem to be very close to what the unit thinks was used, etc.

I have learned a few things now that bum have a fuel-sensor:

I tend to fly a little slower at low altitudes!

Three things really affect fuel bum - RPM, leaning, and altitude.

At altitudes below 6500' I have to throttle back quite a lot to get below 9gph. I have seen as high as 14.5 gph at full throttle, 2600 rpm at 2000 ft. About 2200 will yield 9gph at 2000'.

Once I reach altitudes around 10K, I can bum about 8gph at 2400rpm and 190mph true (this is 'corrected' as comparisons with other RVs show my system to read about 5mph high). Loran readings seem to verify this, although 'steady' Loran readings are tough to get. Interestingly, at high altitudes my max fuel bum does not go up much (<1gph) even at full throttle. I think this is again limited by the max rpm available with my prop.

Obviously I have a 'cruise' prop, as 2600 is the max rpm I can get at any altitude. This does reduce my climb ability somewhat, although the 180hp still climbs well. When just cruising around however, the

lower rpm does help reduce fuel burn. For example, recently 5 RVs flew from Twin Oaks to the Oregon coast and back, in fairly good formation, at 4500' and fairly fast. I was at 2450 rpm with not a lot of throttle left, flying as part of a 4 plane formation (finger 4?). I was the outermost plane, with a 160hp C/S RV-6 in lead, a 180hp C/S RV-4 between him and I, and the RV-8 200hp C/S on the outer-left position from lead. Except for the RV-4, we all had fuel flow instruments and I was reading 9.4gph while the -6 and -8 were at both at 8.4 - their lower burn rate due to their being able to lower their rpm with more bite dialed into their props.

This is by no means complete or definitive information, just some fun data I wanted to share. Basically, if you don't mind running over-square, the C/S prop really CAN save fuel burn over fixed pitch. Also, I'm really having a good time learning more about how to run my engine for decent economy, and the FUELSCAN unit is GREAT!

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**Builder's Tips** . . . Thanks to all who share them with us!

### **Back to Basics**

I had absolutely no experience in aircraft construction or metal work prior to this project. Some general comments from someone who has never done this before that might be helpful to those who are just beginning.

1. Rivet holes for AN4 rivets should first be drilled with a 3/32 or #41 drill. If you start a hole for an AN4 rivet with a 1/8 drill, some holes will inevitably be messed up and too large.
2. Be careful to maintain minimum edge distances.
3. When constructing the wings, insert and tighten the bolts that hold the ribs to the main spar before you position and drill the leading edge and main skins i.e. do not rely on clecos alone to hold the ribs in place. When the bolts are put in and tightened, they will shift the ribs just enough to misalign some of the rivet holes you have just drilled in the skins. One can use non locking nuts for this temporary fastening.
4. If one buys a 4x4 to use as the horizontal member of the empennage jig from a lumber yard in Canada in January, it will be frozen solid. The straight line carefully marked on the 4x4 and then used to locate the hinge line for the horizontal stabilizer will no longer be quite straight some weeks later after the 4x4 has thawed in the workshop and the stabilizer has been built, *[yeah, I know, this doesn't really apply to us, here in Oregon, but it's interesting nonetheless -ed]*

5. A portable 220 volt 5500 watt construction heater (\$80. Cdn) will quickly and easily heat up a somewhat insulated single car garage.

6. The Scotchbrite wheel is a great invention.

7. If you are countersinking anything, the piece being countersunk must be backed up with another piece (usually the underlying rib if you are doing a skin) to positively locate the countersink bit, otherwise the bit will wander and the hole will be oval.

8. If it isn't right, scrap the piece and do it again. Van's Aircraft are happy to send you as many replacement parts as you ask for, and they are very prompt to ship.

9. The Omdorff videos are helpful and a confidence builder.

- William Brooks, Ottawa, Canada, brooksw@cr11.crl.aecl.ca

### **Tail Light Installation**

A short while back, someone posted a question [to the internet rv-list] regarding how to mount the tail light into the rudder bottom. The following steps are how I did mine:

1. On a sheet of wax paper, lay-up several layers of fiberglass cloth (approx. 6" x 6") and resin to achieve a thickness of at least 1/16" and cover with another sheet of wax paper, a fiat board, and some weight. Allow to cure. The excess material from this laminated sheet can be used to fill in the little squares left around the rudder control horn later if desired.
2. Drill a 1 1/16" hole in the laminated sheet for the tail light.
3. Insert the tail light through the hole and mark the outline of the tail light and mounting screw holes onto the laminated sheet. Cut out along the outline and drill mounting holes.
4. Get two #4 nut-plates (available from Cleveland Aircraft Tool). Cut one of the mounting lugs off of each nut-plate and rivet the nut-plates onto the laminated mount with AN426-3 rivets to secure the tail light mounting screws.
5. Screw two #4 screws into the nut-plates and put tape over the heads and threads to mask them from resin while the mount is being fiberglassed to the light blister.
6. Cut away the corner of the rudder with a 3" cutting disc in a die grinder.
7. Fit the rudder bottom to the rudder and around the control horns. It may be necessary to heat the fiberglass with a blow drier to get a good fit. Make the tail light blister slightly smaller than your laminated mount.





