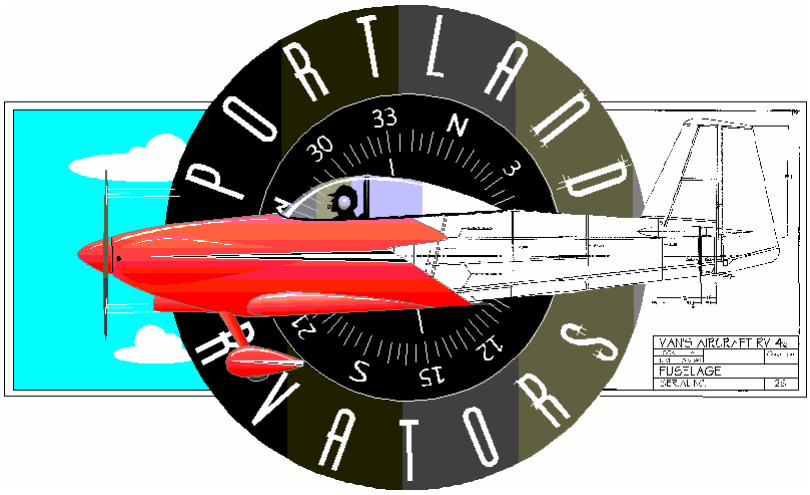
Issue 95.12 **December 1995**



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

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November Meeting

Mike Wilson hosted the November meeting, at his garage where he is building an RV-4. Mike's fuselage was in the jig, with the skins on except for one forward side skin. On display was his fine workmanship, and the many things he's done to beef up the structure, as he intends to do some serious acrobatics when he gets flying. A nice touch is a window in the bottom of the fuselage between the footwells. Mike said he put it in there as an aid to visually "marking" a spot on the ground during aerobatic maneuvers, but I think the real reason is so he can make sure no one can sneak up on him from underneath and "wax his tail".

Mike is using a fuselage jig that was originally built by Roger Hooper, and has neat set-up for maintaining alignment on the centerline: a cable suspended from the ceiling above the centerline of the fuselage, with plumb bobs hung every four feet or so that can be used to check alignment at several points on the fuselage.

Discussion included a humorous account by Chris Lund of a trip he took as right-seater with Dan Delano to Gold Beach, Don Wentz's report on the Matronics Fuel computer he's been beta testing, and Dennis Jackson's account of the FAA inspection and sign-off on his RV-4 the previous Friday (Congrats Dennis!)

Meeting Notice

Frank Justice, Meeting Coordinator (503) 590-3991 e-mail: Frank_K_Justice@ccm.ssd.intel.com

Place: Rod Kimmel's
2090 SW Pheasant Drive, Aloha
Date: Dec 14, 1995 (2nd Thursday of the month)
Time: 7:00pm
Phone: (503) 848-6636

The next Builder's Group meeting will be held at Rod Kimmell's place in Aloha. Rod will have a vertical stabilizer skeleton jigged up and the skin ready to go on. While not as difficult to build as the horizontal stabilizer, there are always some questions on this part so new builders should definitely try to make this meeting (and of course veteran builders should also try to make it so they can favor the new guys with their sage advice).

Rod's address is 2090 SW Pheasant Drive. This is in the area between TV Highway (Route 8) and Baseline Road, east of 185th Avenue. To get there:

From the Sunset Highway (US26) take the 185th Avenue exit and go south past all the shopping centers (the third of which is at the corner of Baseline Road and 185th), and look for Pheasant Lane on the left side. Go left on Pheasant Lane to Pheasant Drive and turn right. Follow it around to Rod's house (2090).

From TV highway turn north on 185th and go to Pheasant Lane and turn right. Then turn right on Pheasant Drive and follow it around to Rod's house (2090). If after you turn onto 185th you have gotten to the second traffic light where there is a small shopping center you have gone too far.

As always, bring in any tools, templates, fixtures, etc. that you want to loan, trade, or show off.

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From the "Big Ugly" (that's supposed to describe my *shop*, not me)

Randall Henderson, Editor

At 12:00 midnight on October 31st, I turned into a pumpkin, as far as flying was concerned. My two years were up -- it was time to get a Biennial Flight Review. So I called up Ken and told him I'd be needing his airplane right away (and no, I *won't* tell you what I've got on him!) Then I somehow managed to pry Mike Seager

away from all the out-of-towners who get precedence over us local guys (I ask you, is that fair?) and we went off for a BFR.

The flight review went well enough, considering that I'm used to flying a plane in which moving the stick 3 inches either way barely even deflects the ailerons. We did the standard steep turns, stalls, and all that, then Mike pulled the power and I proceeded to set up for a nice landing in some trees at the end of an otherwise perfectly short and narrow landing spot. Mike sighed and directed me back to Scappoose airport, where I managed to avoid bending Ken's landing gear in spite of several tries, then we retired to the NWAAC clubhouse for the ground work. We went over the sectional chart the regs, and I realized how much I've forgotten since the last time.

I've flown with Mike several times before, and I recommend him as an instructor. It was fun getting my flight review with him -- he doesn't go into it with an attitude of making you sweat for your review, but he doesn't just go through the motions either. And it was especially fun getting my review in an RV. I recommend that any builders who qualify for the RV "crew training" program discuss with Mike the possibility of combining some of that with a BFR.

Anyway, now I'm current *and* have another 1.5 hours of RV-6 time in my logbook.

One reason I was in anxious to get my BFR taken care of was that I was going to Hawaii (on *business* no less!), and I hoped to be able to do some flying while I was there. No sooner had I boarded the airliner than I spotted a fellow sporting a "Van's Air Force" hat! I went over and introduced myself (wearing *my* VAF hat of course) and he turned out to be Jim Hedrick, an RV builder from Estacada. Jim built an RV-4 which he sold, and is now working on an RV-6. We agreed that while it was nice to be going to some sun & warm water, we were both already starting to get homesick for our projects.

While in Hawaii I rented a Cessna 172 (hey at least it flies) and did some island hopping. As always I was on the lookout for RVs, and only found one -- an RV-4 on the ramp at Hilo on the Big Island. Unfortunately it was all wrapped up in a custom canvas cover to keep it safe from the salt air, so I couldn't even see what it looked like. But I can imagine how much fun that guy must have, cruising up the valleys, along the sea cliffs, or out to that strip on the tip of the island.

How's Your Project Coming Along?

I've been trying to update my information on members' progress for the roster, which I'll publish in a newsletter again before too long. I also like to publish people's status from time to time in the "Project Status" column. So I have a request: how about if you just slip a note into the envelope when you send in the dues for your subscription, with a short update of where you are in your project, plus of course any interesting tips, tricks, or stories of things that have happened along the way.

Calendars

The new Van's calendars are out, and as usual they have offered a special price to builder's groups. So I picked a bunch of them up and will be bringing them to the meeting. Portland RVators member price is $8.

Policy Note

As noted on the back page, anyone is free to re-print any portion of this newsletter, provided they give credit to the original source. I've seen some reprints of articles in this newsletter in other places from time to time, but I've noticed that some have only credited the "Portland RVators Newsletter", when in fact, they were articles that I got from other newsletters or from the internet, and were credited in *this* newsletter as such.

So I'd like to re-iterate and clarify this as follows: Anyone are free to re-print any portion of this newsletter, but please give credit to the *original* source *and author*. If I've re-printed the article from someone else's newsletter, I will say so, and in that case it isn't necessary to credit the Portland RVators newsletter, but please be sure to include the *original* source and/or author as I do. It's only fair.

Top Ten List

The other day I was thinking to myself "I wonder if I really know Richard VanGrunsven well enough to be able to get away with poking fun at him in a top ten list?" Well, I guess I'll find out soon enough, because here they are, the

TOP TEN THINGS YOU'LL NEVER HEAR RICHARD VANGRUNSVEN SAY

10. Beautiful day today. I think I'll go mow the lawn.

9. Sure, hang that thing on there. What's a few more pounds....

8. Man these Grits is Deee-licious!

7. Air Traffic Control, this is experimental 118RV....

6. Sure, stick that thing in there, what's a few more bucks....

5. Well... I really think you should put an auto engine in it.

4. Hello, Sheraton Lakeland? I'd like to book five poolside rooms for the week of Sun and Fun....

3. Great idea for a new design, Ken.

2. I'm going to put the biggest engine I can find in this one, and to hell with economy

1. Hey Randall, why don't you go take the RV-8 out for a spin?

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). A short note updating me on your status would be appreciated too. *If you are paid up but the date doesn't reflect this, please give me a call so I can correct it.*

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EVENTS CALENDAR

EAA Chapter 105 Meeting Thursday, December 21 (third Thursday of every month) 7pm at Twin Oaks Airpark. This month is the Christmas Potluck, so bring a dish!

EAA Chapter 105 "Breakfast at the Aileron Cafe' " Saturday January 6, (first Saturday of every month) at Twin Oaks Airpark, 8am. Holiday Grits!

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

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First Flight of RV-4 N296DJ

by Dennis Jackson

Well, the big day finally came. After waiting ten years to see my creation fly, it took to the air like it really belonged there. Actually it isn't my very own creation, I just put together another one of Dick VanGrunsven's babies, an RV-4. But I was the one who stuck everything together and now three it was, all holding together and in the air!

As the time to fly got closer, I kept thinking about the fact that most of my spare time the last few years had been spent building an airplane instead of flying one. Consequently a fairly thick layer of rust had built up on my flying skills and I wasn't too sure I'd be up to an emergency should one present itself on the first flight. My introduction to flying had been about 15 years ago with the test flight of my Mitchell B-10 flying wing ultralight that I built and it scared me so bad that I laundered my shorts and went over to Evergreen field and signed up for lessons with Wally Olsen (why not bend someone else's airplane while you learn, right?) I must say the next flight in the B-10 was a lot more fun. So being a bit older now and pretending to be wiser, I enlisted Mike Seager for the honor of doing the first test flight of my RV-4.

One plus to having someone else fly your bird is that you will get the satisfaction of knowing it has gotten a very careful inspection by a knowledgeable person. The FAA inspectors are good, but they aren't going to fly in it, so they might not take quite the same interest. Mike went over the airplane very carefully, made a couple of comments like "You know, I think you ought to put a cotter pin in that throttle lever clevis." "Oh yeah, Mike, good idea!" A few tweaks here and there, and at last we were ready for the FAA inspector.

My own particular adventures in bureaucracy leading up to my grand government inspection make another sad tale by themselves, but the long and the short of it is, get acquainted with your local inspector. He can be quite helpful when it comes to deciphering the oddities the government calls "standard forms" and he might even save you some frustration and waiting. I had nothing but good experiences with people I dealt with at the Hillsboro FSDO. I was expecting someone who looked like Lenin tell me to fill the forms out correctly next time and come back a month from Thursday, and was a bit surprised to find very pleasant helpful types who seemed genuinely interested in my project. Just be sure to start your paperwork several months before you expect to be ready to fly. Oklahoma City is on another planet, you know.

Anyway, the Big Inspection went quite well, I now had the coveted Special Airworthiness Certificate clutched in my sweaty hand and at last I am ready to.... wait for the rain to quit. After watching the whole summer slowly drift away, my plane is ready to fly and the weather immediately turns miserable. Maybe it has something to do with the sign I was born under (Watch out for Falling Rock). I let a week go by while we eliminate the northwest water shortage, then Saturday dawns just as miserable as the rest of the week. I figure so much for today, I'll just wander out to the airport and clean up the hangar and mope around.

As I get nearer the airport, the weather seems to get clearer, until right at Scappoose there is basically a major blue sky hole. Darn, I should have called Mike! Not to worry, here he comes now in his beautiful blue 6 with a builder in the left seat getting some orientation time in. He pulls up to the hangar and says, "Ready to do it?" About that time Brent Anderson wanders up looking for some excitement so now I've got a test pilot and a cameraman. All we need is a chase plane. Since Ken Scott has renounced his life of carefree ease and become a workaholic like some others of us (what happened to you, Ken?) he was working instead of fulfilling his solemn promise to fly chase and get great pictures for posterity. But Mike, being the well-connected guy he is, puts in a quick phone call and in a few minutes along comes Blackie to the rescue.

Soon I'm in the back seat of Blackie's -4 and we're rolling down the runway with My Bird breaking ground alongside. Yes, yes, yes, oh what a feeling! We climb up to altitude and everything looks good, no parts falling off or anything, so we let Mike check everything out for a while while I run the battery down in the videocam and shoot up the film in the 35MM. After a bit Blackie lands and lets me out so I can watch Mike try a landing or two and get some shots from the ground. I watched Mike do his feather imitation as he settled on

the runway and then headed for the hangar to wait for him to taxi in.

When he came back alive I had to face the fact that now it was my turn. I had prepared for the event by getting a couple of hours of dual with Mike in the factory RV-6 a few weeks before. That was a really good way to calm the jitters and reassure myself that the plane can be flown after all by mere mortals. Thanks, Dick, for making that opportunity available.

Before I know it I'm strapping in and cranking up the mighty Lyc for real this time. Checklist, don't forget to look at the checklist! Runup looks good, "Scappoose traffic, 296DJ launching from runway 15, get away while you still can!" OK, now power in, right rudder, tail up a bit, wow, that was fast, time to turn crosswind, whoa here's the pattern altitude already! I think I like it!

After playing around a bit, I brought my new toy in for a landing for the camera. I must have done something right because it was the smoothest landing I'll probably have in the next hundred hours. Nothing like getting it right when it counts. So the ace taxies in and is so cool that the top of my head didn't even fall clear off from the grin! I did get a severe smile cramp however.

So the question is, was it worth waiting ten years for? You bet! The building was fun and the friends I've made while doing it have made it just that much better. It has been a neat experience to receive so much support from those friends and also people who barely knew me. Thanks to you all, for helping me get my project off the ground.

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Drilling RV-6A Landing Gear Mounts with Limited Shop Area

by Brian Moentenich

My area for construction (half of a 2-car garage) does not permit easy assembly of the wings to the fuselage while its still in the jig. Waiting until most of the skins have been installed before installing the gear mounts looked like access would be extremely limited. I decided to remove frame F-604 (before it was riveted in) and temporarily assemble the wings to it in someone else's 2-car garage. I bolted the wings together with F-604 upside down. They take up an area 4' x 21'. Eight 3/8" hardware store bolts were used in the inboard & outboard holes of the steel splice plates of the spars. I also installed two 1/4" bolts on each side of the spar which also go through F-604B and F-604C plus a 3/16" bolt beneath (top side) the 1/4" bolts for alignment. The gear mounts do not receive these fasteners.

During initial assembly of the fuselage frame, I used two 5/8" thick pieces of particle board glued together for a spacer (where the spar will go). The actual thickness of these pieces was measured to be 1.240". The spars were measured to be 1.210" thick. Because of the difference in thickness, I made two shims out of 0.025" material and used them during assembly of the spars to F-604.

The 1-1/4" x 1" angle (between the fire wall and F-604) had been trimmed for clearance of the gear leg tubes. It, the F-6101 (gear attach web), and the 3/4" x 3/4" x 1/8" angle had already been fitted, drilled & clecoed together before I removed F-604 from the jig. These were clecoed to the F-604 assembly in my friend's garage. Fortunately, my kit already had the gear legs drilled to the mount. I assembled the legs to the mounts & used 5/16" hardware store bolts in the hole to align the legs to the mounts. Using clamps, I positioned the gear mount/leg assemblies on F-604 and kept adjusting them until they were properly located (21-3/4" from the bottom surface of the skin) as shown on drawing # 59. I paid particular attention to making sure that when I drilled the holes, there would be sufficient room to install the nuts. I also checked to make sure the angled steel reinforcing plate on the mount didn't cross directly over any bolt holes (it didn't).

Drilling the 3/16" Holes in the Gear Mount

The objective is to drill all of the holes in the gear mount in exact (or within a few thousandths of an inch) alignment with the holes in the spar. Once bolts are installed, the load will be carried by friction between F-604 and the spar plus a few bolts. The first hard landing will probably overcome the friction and the holes surrounding the bolts holding the load will deform slightly. Once this happens, the remaining bolts will pick up the load if their holes were accurately drilled.

My original plan was to use a 3/16" diameter transfer punch to mark the location of the spar holes on the mount. I would then remove it, center punch them deeper and use a drill press to form the holes. I bought a stub 3/16" drill bit. Starting with a center drill (which I already had), I would use a pilot drill first and finish with the stud drill. My backup plan (if the holes weren't located accurately) was to drill them 1/32"

oversize and use Devcon plastic steel filler in the voids between the bolts and oversized holes. I did not do either of these things. I was afraid I could not drill the holes on the bench to the necessary accuracy. It would be quite difficult to hold & locate the mount under the drill press. I also didn't know how well the Devcon would stick to the steel mount and its yield strength was quite a ways below that of the steel mount and the bolts.

I did use the transfer punch to mark the steel mount. Leaving everything assembled, I inserted a 1-3/4" long 3/16" OD brass tube (from a hobby shop) in the hole to keep the drill bit from contacting the aluminum. The ID of the tube was 0.003"-0.004" larger than 5/32". Using a 12" long 5/32" diameter drill bit, I started the hole. I switched to a long 1/8" bit to drill through, back to the long 5/32" to enlarge it, and then removed the brass tube and used a long 3/16" bit to finish up. Before using the 3/16" bit, I dulled the cutting edges on the flutes starting about 3/16" back from the business end. This would reduce the risk of enlarging the 3/16" hole in the aluminum. When I was done, the long 3/16" bolts needed light tapping to get through the spar portion and fairly heavy tapping to go through the steel portion. The holes in the steel should probably be drilled with a #12 drill - but I did not want to use it in the spar holes because the bolts fitted so snugly. I may need to use the #12 drill at final assembly - this will not be a problem.

Drilling the 1/4" Holes in the Gear Mounts

There are 4 holes in each mount which requires enlarging the existing 3/16" diameter holes in the spar. For these, I started by drilling them out to 3/16". I did not take particular care to avoid reaming out the spar holes since they would be drilled larger. I made a drill guide by putting a 1/4" hole in a piece of 3/4" x 3/4" x 1/16" angle and clamped it about 9" from the mount. I used my long 3/16" bit to align the 1/4" hole in the angle to the hole through the spar & mount. This would serve to keep the bit lined up with the hole during drilling. I then used a long 12" bit (again with the cutting edges of the flutes dulled) to drill it out to 1/4". Three of the 4 holes can be drilled from the steel side which is recommended. One has to be drilled from the aluminum side because the tube for the gear leg is in the way.

There are also a total of six 1/4" holes to be drilled through the 1-1/4" x 1" x 1/8" angle into each mount. Four take hex head bolts and two take flat head bolts (they are countersunk with a 100^{o} tool). Matching up to existing holes is not required on these as none of these holes have been previously drilled. I drilled only the four holes for the hex bolts (from the steel side whenever possible) using my temporary drill guide for the long 1/4" bit. I waited until I reinstalled F-604 back into the fuselage (together with the 1-1/4" angle) to drill the holes for the flat head bolts. I had a 100^{o} countersink for 5/32" rivets. Its body diameter is just large enough for the 1/4" flat head bolts. A shim needs to be installed between the steel mount bracket and the 1" x 1-1/4" angle. Assembling the mount back in the fuselage is the only way of determining what thickness is needed. I first drilled these holes to 5/32", and then used the countersink with all pieces still clamped together. After countersinking, I used my long 1/4" bit to finish the hole. These should be final drilled starting from the aluminum side to assure concentricity of the countersink to the hole. When the skin is installed, one of the bolts can be used to dimple it. This countersinking operation could also have been put off until the skin were clecoed on.

Where did I Get the Tools?

I bought the long 3/16" drill bit from Parkrose Hardware. It cost about $8.50. The 1/4" one was $10.50 or so. I found a tool supply store which sells quality stuff for about half that. It is Palm Abrasive & Tool Inc. on 14th & SE Belmont in Portland. They sold me the transfer punch & 3/16" stub bit for a total of $2.45. The long 1/4" bit was about $6. I also bought a very nice 6" dial caliper with graduations of 0.001" for $25. I think I'll be back there a few times.

Suggestions on How a Better Job could be Done?

Mackinnon Tool Co. in Portland (235-8555) sells drill guide bushings. They said they could get one 3/16" OD which would work - but it would take a week or so. Its ID would probably be a closer fit than the Brass tube I used. I didn't order one because I was in a friend's garage & didn't want to impose for that long.

I could have used the drill guide for the 3/16" holes like I did for the 1/4" holes.

There doesn't seem to be any reason why Van's (or Phlogiston) couldn't match drill the holes in the landing gear bracket when the spars are drilled. Builders would, of course, have to commit to choosing a 6A when ordering their wings if they wanted this option.

Am I Satisfied?

Yes. All the bolts fit quite snugly (maybe a bit too snug) and I feel they were drilled within a few thousandths of where they should be. Considering the fact that each mount is attached with approximately 20 bolts, I think it will work fine. Besides, I don't plan to make any hard landings!

G-Loads

By Calin Brabandt

In recent discussions with fellow builders, I discovered that many RV builders and pilots do not realize that it's relatively easy to overstress an RV airframe in flight through inattentive actions. This is largely due to the fact that RVs have the generally desirable qualities of relatively low stall speeds combined with fairly high airspeed capabilities. Although Van has covered this

subject many times himself, and the following cautions are even implied by data in the Van's Aircraft information package, I thought I would generate a few examples with hard numbers to show how load factor overstress can be induced at easily attainable airspeeds.

Below Va (the symbol denoting maneuvering speed), an airplane will stall before it exceeds its load factor limit. Va is a function of the airplane's unaccelerated (1 G) stall speed and its load factor limit. It is equal to the square root of the load factor limit times the unaccelerated stall speed. Hence if an airplane stalls at 1 G and 55 mph, its stall speed at 6 G is:

sqrt(6) * 55 mph =
2.45 * 55 mph =
134.7 mph

If the airplane is designed to tolerate no more than a 6 G load, 134.7 will be its Va.

As a mental exercise, it's interesting to test the formula using the 1 G case and prove its consistency:

sqrt(1) * 55 mph =
1 * 55 mph =
55 mph

Hey, we already knew that!

If the load factor limit were greater than 6 G, then the airplane would still achieve a 6 G stall at 134.7 mph but Va would now be greater than 134.7 mph.

In either case, if you try to pull 6 G at any speed less than 134.7 mph, you won't be able to do it -- you'll stall first.

Alternatively, to pull 9 G in an airplane with a 55 mph stall speed would require at least sqrt(9) * 55 = 165 mph! Similar to the example above, below 165 mph, it would be impossible to pull 9 G -- you'd stall first.

Notice that the airspeed difference between 6 G stall and a 9 G stall is only about 30 mph! With only a 30 mph airspeed increase, you could exceed the airframe G limit by 50% before stalling the airplane! Of course, this is likely to result in airframe failure.

6 G is the upper limit for Van's designs, and it's usually at a lower maximum gross weight limit too. Loads above 6 G will likely damage the airframe and must be avoided. Assuming a 50% design margin, loads approaching 9 G or more will likely result in catastrophic airframe failure -- especially when the possibility of turbulence is considered which is not the subject of this discussion. In any case, loads above 6 G should be considered as potentially damaging to the airframe. (Loads well below 6 G can be at least temporarily damaging the some pilot's physiological functioning too!)

Also keep in mind that stall speed varies with gross weight. The lighter the weight, the lower the stall speed and the lower the Va. Or looking at it another way, if the airplane is light, it will accelerate even harder at any given speed with any given control deflection hence pulling more G than if it were heavier. It will be capable of realizing its load factor limit before stalling at an even lower speed than if it were heavier.

All of the above arguments assume enough elevator control authority to establish a stall angle of attack. That's certainly the case with RVs and I wouldn't have it any other way.

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

Using the Fan Spacer

On your workbench or other convenient permanent surface, mark a fixed point for the left end of the fan spacer, then for each of the 3/4", 7/8", 1", 1 1/4", and 1 1/2" spacings, stretch the fan to that spacing (measured with a 36" rule), lay it on the bench with the left end on the fixed point, and mark where the right end is on the bench. Then label each right end position. Now all you have to do when you want to get a particular spacing is stretch the fan out on the bench with the left end on the fixed spot and the right end on the appropriate mark. -- *Randall Henderson*

RTV Revisited

First some history: A couple of years ago some concern cropped up among builders about the fact that normal RTV contains acetic acid which can allegedly be corrosive to aluminum. Since then there has been a lot of discussion about what to use instead, particularly at the ends of the rudder and elevator skin stiffeners. In fact I did some research on the alternatives at that time and printed an article on my findings in this newsletter. As a result of all the concern, Van's manual was changed to specify "Electronic grade" RTV which contains no acetic acid.

At the last meeting, Bill Benedict related some interesting new information on this subject. He told us that Van's had spoken to one of the RTV manufacturers, and they said that the Acetic acid based RTV was originally developed *for the purpose* of making it stick *better* to aluminum! Apparently the other type would peel off a lot easier, and the acetic acid was added to give it self-etching properties.

Van's then made two samples of 2024-T3 aluminum, one with acetic acid RTV and one “Electronic Grade” RTV (no acetic acid), and gave them to Steve Harris who put them in an environmental chamber (salt spray and the whole bit) for 2 months. After that time neither sample showed any corrosion, but the Non-acetic acid based RTV would peel off relatively easily while the acetic acid based RTV still stuck quite well.

So now it looks like we're back to using normal RTV after all!

One note: a lot of us prime before riveting, and I wouldn't be surprised if either type of RTV would stick better to the primer than to bare aluminum. So it probably doesn't matter much which type you use in that case. -- *Randall Henderson*

Air Brush for Small Priming Jobs

Just thought I'd pass on a little tip regarding priming. Visit your local hobby shop a pick up their cheapest air brush with a one ounce color container. A single action brush is sufficient (I'm using a Pasche Brush with a No. 5 tip (it gives more coverage than a No. 1 or No.3). This handy tool is great for touch up priming or priming small assemblies such as a flaps or ailerons and the inside of a skin is also easy to do. The great thing about an air brush is that overspray is kept to an absolute minimum (almost nil). You'll be amazed at how far a couple ounces of mixed Veriprime will go. If you buy a larger color container just cap the openings and put the leftover primer in the refrigerator and It'll last for a couple of weeks. The Veriprime when properly mixed is viscous enough to flow through the brush easily. I've found that 25-30 psi on my compressor works well. The money you save on primer alone will pay for the brush many times over. I now only use a touchup gun for big jobs.

As always, wear a charcoal filter respirator or build a fresh air mask -- *Chet Razer crazer@midwest.net (from the internet)*

Project Status

Gary Standley (prototype RV-3 museum restoration ramrod) reports: Ron Poe and John Kimmel were over Saturday, November 25th and accomplished a lot of the riveting that was left in the narrow end of the tailcone. Ron put himself inside and John worked from the outside. John is an aircraft sheet metal mechanic for Columbia Helicopters and is waiting for an RV3 kit. He came over to get some idea of what he was in for. The project will be CLOSED December 23, 1995, Christmas weekend.

Steve Householder recently plugged the wings in and drilled his gear legs on his RV-6A. He's currently finishing up riveting the bottom skins and should have it turned over and go at the top skins soon.

Andy Moscarelli has finished his RV-6A Empennage and is starting on the wings. Andy is an experienced homebuilder -- he built a Polly Wagon a few years ago, but this metal stuff is new to him. He's not having any trouble transferring to the new medium though, and at the very least his plane is sure to have some nice fairings!

Andy lives in North Carolina, and I met him through his daughter and son-in-law, who live here in Oregon. I showed him my project when he came out here for a visit, and he ended up getting a Van's tour and demo ride, and... well... the rest is history. Although he lives a bit too far away to make the meetings, he *does* qualify as a bona-fide Portland RVator, since he subscribes to this newsletter.

Andy Moscarelli (must be saving his "RV-grin" for the first flight)

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New Members & Guests

Ken Melvin signed on to the group recently. Ken has an RV-4, which he's been flying for several years and has *lots* of hours. Ken used to fly P-51s for the New Zealand Air Force, which would explain why his cockpit looks like the inside of a P-51, and has a New Zealand air force emblem on the tail.

Harmon Lange, who manufacures landing gear legs for Van's, joined the group last month. Harmon and his wife Marcy recently moved to Scappoose from Wasau, Wisconsin. The have an RV-4 (serial #6) and a Davis V-tail D-2A.

New member **John Porter**, an airline pilot, plans to build an RV-8 when the kits become available.

John Morgan is an A&P mechanic and RV-4 builder, and the "new guy" at Van's, working in the engineering and technical support department. John moved up here from Blythe, California.

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The Tool Exchange

Please give me a call (Randall Henderson, 297-5045) to let me know if you have jigs, tools, shop space, etc. to loan, exchange, or otherwise provide, or if you are looking for something specific to borrow. And whether your item is listed here or not, go ahead and bring it to the meeting.

Precision chemical scale. Great for measuring pro-seal. Brent Anderson, 646-6380.

Surveyor's transit level -- makes fast, accurate work of leveling your wing spars in the jigs. Bill Kenny, 590-8011

Back Riveting Contraption -- large, counterweighted bucking bar and suspension system, and offset back rivet sets. (See "Back Riveting Wing Skins, December 1994 issue). Bob Neuner 771-6361

Lead crucible with electric heating element for melting lead for the elevator counterweights. Doug Stenger, 324-6993

Aileron bracket locator tool. Adjustable aileron push-pull tube (for measuring the exact length to cut the real ones). Last I saw, Rion Bourgeois had this -- 646-8763h

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Don't Want Ads

Let us know what you got but don't want, or vice-versa. Ads are FREE.

1/4 Share in 1956 Piper Tripacer hangared HIO. 3100TTAE, 1050SMOH. KT76A Txpdr w/ Mode C, 4 place Sigtronics intercom, VAL com, Apollo Loran. Cleveland wheels/brakes, Peterson Autogas STC. Estimated flying expenses of $65/month fixed costs including hangar, insurance, annual. $25/hr for fuel, oil, engine reserve. $4000. Call Steve, 324-8131 or email steven.l.harris@tek.com

RV-6A Tail, Wings & Tools for sale. Tail finished, wings partially finished. Includes heated pitot tube (plumbed & installed), electric elevator trim kit (not installed), all tools, including Avery Master Build kit. Wing kit has the latest improvements, including pre-punched skins and prefabricated aileron & flap stiffeners. Excellent craftsmanship -- local builders Norm Rainey or Dick Zander have seen it and commented on the exceptional workmanship. Will sell all for $8600 (my cost) Ron Gray 360-254-1501

Hangar for rent at Hillsboro, available immediately. Cliff C. My work phone is 503-696-7204, and my home number is 503-645-6520. cliffc@teleport.com

Hangar/builder space available. EAA Chapter 105 Hangar at Twin Oaks Airpark. Builder space Includes the use of a large custom-built moveable builder’s work table. $60/month for space to build, or $120/month to hangar a plane. Rion Bourgeois 579-8800w, 646-8763h.

Wanted: Apollo FlyBuddy GPS. For Sale: Electronics International 4 channel EGT w/probes. Don Wentz 696-7185

Leading edge fishing rod storage compartment kits $20. Rion Bourgeois 579-8800w, 646-8763h.

RV FLIGHT BAG is having a 25% OFF CLEARANCE SALE on everything in the catalog excluding earrings and RV models. Contact Judy VanGrunsven at 33770 NW Bagley Rd Hillsboro OR 97124-8303 or call (503) 648-3464.

David Clark H10-30 headset with mic. No volume control. Works good. $90 - Gary -- (503) 591-9040.

O-320 D2G 2024 SMOH by Western Cylinder Overhaul, Inc. Hollow crank, can be modified to C/S prop. Chrome cylinders using 1qt in 14 hrs. Will fit RV-4, -6, -6A. $5500.00. Dave or Bill (503) 829-6379.

40 #8 closed end nutplates for fuel tank access covers - $36 (20% below my cost). Note that the rivet spacing is different than the standard nutplates supplied with the kits, so if you have already drilled your access plate-reinforcing ring-root ribs like I did (or have the new pre-drilled access covers & reinforcing rings), you will have to fabricate new ones to use these nut plates. Also: two brand new old style (steel pot) Stewart-Warner fuel gauge sending units -$20 for the pair. Rion Bourgeois, 579-8800, 646-8763.

Avionics Work, $20/hr. Experienced, will work with you. Tim Steele 452-2575

Heated Pitot-tube (Piper blade style), missing heater element, $35. Brent Anderson 646-6380

3-month old IImorrow 920, GPS-North American Continent database. Wally Anderson 623-2328 work, 342-5240 home

Duckworks Landing Lights. Retro-fittable, light, easy installation. Kits start at $69 (discount for Ptld RVators). Don Wentz, 503-696-7185 for info.

Hot tip! The low fuel level warning switches offered by Aircraft Spruce for $35.80 can be purchased from the Madison Co. for $22.00. They are model # M7700. Their phone number is (202) 488-4477. Chris Brooks (internet)

Wacky Willy Watch *.....neat/useful stuff seen at Wacky Willy's. West side store 642-5111*

As of 12/1 they had a whole box of vacum on/off rocker switches for $1 ea. -- probably not "aircraft grade", but they look like they could work for switching off your gyros to save wear and tear when doing aerobatics.

There was also a big roll of 1/2" rubber seal material with adhesive on one side -- slit one edge and it could make a good canopy seal, although at 1/2" it may not be wide enough to fill the gap. I'm going to try it anyway.

Before you order a rivet set for your gun, check out their selection. They have all shapes and sizes, new surplus, for $5 each. Also squeezer sets, but beware! The shanks are "industrial size" and won't fit most of our squeezers. Also jewelers file sets (handy for deburring tight corners, etc.) for $5.

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"Twilight Patrol" - An Echelon of RVs heads into the setting sun 'on patrol' over the Oregon coast. Photo from The Duck's RV-6, right to left - Ken 'Doc' Melvin's RV-4, Carl Hay's RV-6, Dick 'Van' VanGrunsven's new RV-8. Flying 'cover' just out of the shot is Roger 'Blue Max' Hooper's RV-4.