

*The Newsletter of the Home Wing of Van's Air Force; Builders and Fliers of Van's RV Series Aircraft*

MARCH MEETING

The March meeting was held at Steve and Janet White's beautiful solar home in Clackamas. Steve is working on the fuselage - wonderful work he's doing. We were EXTREMELY impressed, though, by his logbook - complete with color charts, bar graphs, intricate detail, etc. My, oh my! Thanks for the hospitality and wonderful hors d'ouvres. Frank Justice talked to us about test flying his stealth plane (has anyone seen it yet? He didn't even fly it to the pancake breakfast "since it's only a 10 minute drive". Yeah, right!). He had 7 hours on it as of the meeting - I'm sure there's more to be heard on that subject. Bill reminded us that they're still accepting donations for the Young Eagle plane - contact Van's Aircraft to contribute.

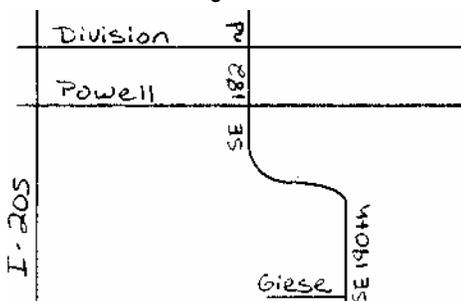
**Meeting Notice** - Frank Justice, Meeting Coordinator  
 (503) 590-3991 Frank\_K\_Justice@ccm.ssd.intel.com

Place: Bob Boring's House  
 18321 SE Giese Road

Date: April 10th (2nd Thursday of the month)

Time: 7:00 pm

Bob is currently working on the wing (at my last update) of his RV-6A. His home is in Gresham at 18321 SE Giese Road. To get there, take I-205 to the Division or Powell exit (either will work). Head East to SE 182nd Avenue and turn Right (South). 182nd will wind along until it becomes SE 190th Ave. Continue South to Giese Road and turn Right. .1



EVENTS CALENDAR

**EAA Chapter 105 Monthly Meeting**

Thursday, April 17th (third Thursday of every month), 7:00 pm at the EAA 105 Hangar/Clubhouse, Twin Oaks Airpark.

**EAA Chapter 105 "Breakfast at the Aileron Cafe"**

Saturday, May 3rd (first Saturday of every month) at Twin Oaks Airpark, 8:00 am.

**Home Wing Van's Air force 6th Annual Fly-in**

Saturday, June 21st at the Scappoose Airport

FROM THE "BIG MESS"

*Jerald and Kathy Hall, Editors*

Here we are, another month passed already! Well, we did it - we made reservations at a place to stay at OSHKOSH! We're going to Oshkosh... we're going to Oshkosh! Have to go buy Katie some Oshkosh B'gosh outfits to wear.. .have to be in proper fashion!

She's eating baby food now! The other day I bought her a bib that says, "My mouth is not an airplane hangar!" It seemed appropriate since she has a spoon with an airplane for a handle. ..open the hangar!

The fuselage bulkhead's are coming right along. Jerald is putting in the baggage compartment as we speak. Believe me, it's very hard to sit in it and play with the rudder pedals when it's upside down. See photo...



Jerald trying out the rudder pedals while the fuselage is in the jig.



Jerald and Katie discussing where we're going to put her in our 2-seater. Van, we need a 4-place plane!

**SUBSCRIPTIONS DUE**

Look at the date under your address on the cover. THAT IS THE DATE YOUR \$10 IS DUE. Use the form at the back of this newsletter to subscribe or renew. A short note updating the editor on your status would be appreciated too. *If you are paid up but the date doesn't reflect this, please give the Editors a call so they can correct it.*

**RV-8 #2 FIRST FLIGHT**

*by Randall Henderson*

A couple of Fridays ago, an "inside source" told me there was going to be something interesting going on out at Van's skunkworks that afternoon, so I decided to "just drop by" after work. When I arrived, I found the prototype crew crawling all over N58RV, the newest RV-8, preparing it for it's maiden flight.

The plane is, to my eye, one of the prettiest planes to come out of Van's shop. The color is best described as "taxi cab" yellow, with blue trim striping, anchored by (what else), a big "RV8" at the front end, and is a real eye-catcher. The workmanship is exceptional, even when compared to other Van's prototypes.

I had been there for about an hour, "helping" to transfer gas from the RV-4 a couple of gallons at a time in order to calibrate the fuel tank gauges, when the test pilot (you guessed it, Van), showed up. By that time the sun was getting close to the horizon, so Van said screw the gauges (well, those weren't his exact words, but we got the idea). The rest of the fuel was poured in, and he strapped on a parachute and climbed in. We all ran down to his estimated rotation point and watched as he made a single high-speed taxi run, then taxied back for the takeoff. From my standpoint the takeoff was typical RV, although of course minus Van's trademark maximum angle climb-out like you see at the fly-ins. Bill Benedict flew chase in the RV-4 for the short flight. The only problems Van mentioned when he returned were a low oil pressure reading and a heavy wing. We also noticed from the ground that one of the wingtip strobes had a case of the "jitters".

One noticeable difference between this plane and the first RV-8 is the taller landing gear. When I asked why the gear was so much taller, I was told that it was "so it will reach the ground".

The new -8 has an O-320 with a constant speed prop. Engine Guru Everett Hatch worked his magic on it so it is "160+ hp". One reason for using this particular engine/prop combination is that it is essentially the same as what is in the factory RV-4, and this will allow for performance comparisons between the RV-8 and a similarly powered RV-4.

Scott and Phil told me that this plane took longer to build than previous prototypes because of the fact that it was designed and built the reverse of previous prototypes. That is, previously a part would often come out of engineering as a sketch or with rough dimensions and might have to be modified to fit, and were even sometimes designed and built on the spot. The modified part would then be measured to get the "real" dimensions, and committed to plans. But Van's has finally entered the 20th century, and with this model, all parts were designed on CAD and punched out on a computer driven punch press. The CAD provides for better initial dimensioning, but some changes are still necessary, and these changes would have to be re-entered into the computer, a disk sent to the fabricator, and a new part made. (Van's recently acquired their own precision punch press, so in the future this process will be streamlined considerably!) This process made for a longer build time for the prototype, but the resulting parts are more accurate and often pre-punched, so it should mean a much shorter build time for the end user.

There is one more RV-8 prototype fuselage in the shop (hope I'm not giving away any secrets here) which should go together much more quickly, as it is essentially one of the first "kit built" versions. I am told that the major modification will be the location of the third wheel, as it is to be the -8A (tricycle gear) prototype.

**Rolling Skins**

*by Randall Henderson*

A common technique used to avoid "scalloping" of the edges of your skins is to put a slight bend in the edge using Avery's edge rolling tool or similar. But if you're like me, you have at one time or another forgotten to roll the edge before dimpling the holes along the edge. I came up with an easy way to still do this after the dimples have been made. Just make a spacer out of 1/8" thick wood or aluminum, (I used a scrap of thin plywood). Cut it the diameter of the rolling tool, cut a hole in the middle to clear the rollers, and tape it to the tool. This way the "rolled" portion is narrower, but the wheels clear the dimples. Keep the spacer around, you may need it more than once!

## Drilling RV Gear legs for Cotter Pins

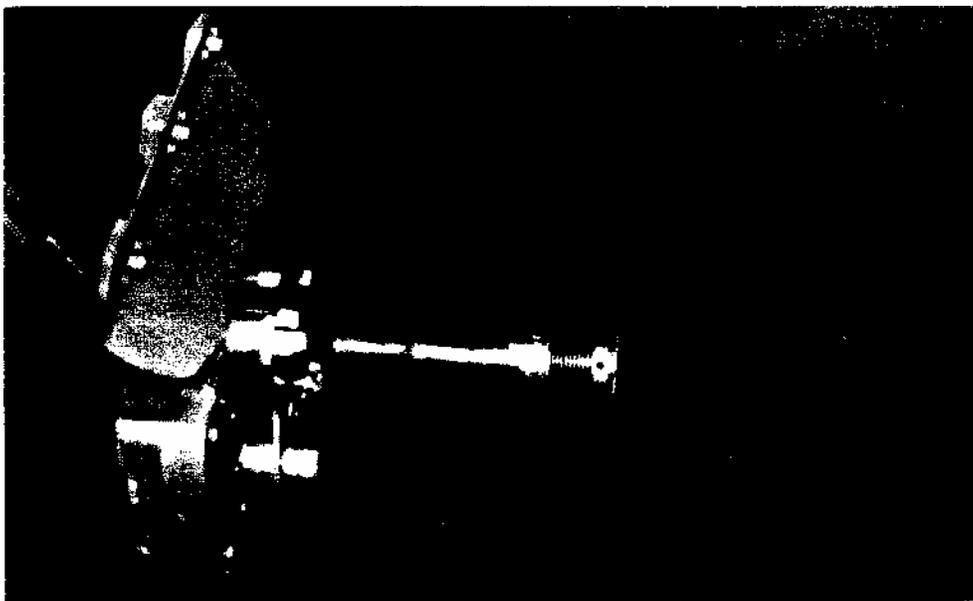
by Brent Anderson

When the time approaches to perch your bird on its own talons for the first time, an important but possibly troublesome drilling operation will be accomplished... that of drilling the main gear legs and tail gear for cotter pin installation to safely the wheels on. This job is best done on a drill press. Since the legs are heat treated steel, slow speed, steady pressure, and use of cutting fluid seem to be a good combination for success. If the drill bit is allowed to get too hot, the steel will work harden and become extremely difficult to cut. Enough pressure has to be applied to keep a steady chip coming off the drill. Using a tube drill jig like that available from Avery (Part no. 74735) is a good way to center the hole on the cylindrical surface, and make sure to drill straight through. The troublesome part is that the gear legs have already been threaded when you get them, and of course you will want the drilled holes to be located precisely to align with the castle nut slots (tail gear) and axle nut holes (main gear) in the final assembly. So how do you cross-drill an accurate hole through a threaded piece of heat treated steel rod without screwing it up? You really don't want to botch this operation. Your gear legs have been match drilled and honed to fit your motor mount, and interchangeable replacement parts aren't available without fit complications best avoided (not to mention the expense). I asked the magic question of several builders ...always eager to learn from other's mistakes... results in less tears you know. To my surprise, no one had a ready answer. Drat!! Now I had to THINK again. Oh well, I dreamed up a simple technique and it happened to work so I thought I'd share it... it goes like this:

### Main Gear Procedure

- Assemble wheel onto axle
- Hand tighten axle nut
- Locate position on axle nut to drill cotter pin holes... remove nut & drill through all 6 flats using a #30..
- Reposition axle nut, and hand tighten again.
- Mark a spot on the axle threads through one of the holes in the axle nut using a sharp point.
- Remove the axle nut and the wheel
- Using a jeweler's file, now file a small flat surface to the minor diameter of the threads where you want the hole (see photo).
- Jig the axle, center punch, and drill through two holes in line, first with a #40, then a #30.
- The hole will damage at least two threads as it breaks through on the back side... so remove the damaged thread area by filing another small flat with the jeweler's file.
- Reassemble the wheel, and hand tighten the axle nut to confirm that a cotter pin can be slipped in. The holes in the nut may need to be enlarged slightly (like to a #12 drill).
- The wheel bearings are tapered rollers, so the ideal fit is to have the axle nut backed off just a taste from snug (you should be able to apply a rocking force to the wheel and just barely feel a perceptible clearance in the bearings). If the nut is too snug when a cotter pin is inserted, it is easy to file a few thousandths off of the nut face to achieve the desired fit.

The tail gear procedure is the same general idea as the above. It's easier in the respect that there is no tapered roller bearing fit to deal with, but possibly harder in that you must drill through a solid shaft. Back the drill out often to clear the hole of chips and apply cutting fluid frequently or else you risk breaking a drill off in the hole.



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### INVITATION TO A PRIVATE FLY-IN

by Walt Cannon

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wcannon313@aol.com

Hi. I am an RV-6 builder/flier and have decided to hold a private RV fly-in at my property on the Randle-Kiona airpark in Lewis County Washington. It will be (weather permitting) held from 11:00 to 3:00 on Saturday the 10th of May. I am inviting the members of both the Portland and Seattle builders groups to attend. This will be a very low key and informal gathering and any one who attends should plan on fending for themselves as I have only a very small cabin located on the airstrip with electrically, an outhouse, and no running water. The area, though near the mountains is quite easy to fly around and there is some beautiful scenery. Both Packwood and Morton which are each a 10 minute flight away have airports that are in easy walking distance of town and a selection of restaurants. If you wish to bring your own food and drink, there are some very nice places to dine on my property.

Specifics are as follows:

A/here: Randle-Kiona Airpark, found on the Seattle sectional between Mt. St. Helens and Mt. Rainier. The airstrip is about 5 miles SW of the town of Randle which is between Morton and Packwood on highway 12. Highway 12 is the one that crosses over White pass to the east.

Airport Specifics: 2500' of fine pea gravel, quite smooth surface. Runway is oriented 07/25. There are some tall trees at the east end and lower trees at the west end. Preferred landing in a no wind situation is 07 to the east. Local Traffic advisory is on 122.9 use conventional LH pattern, airport elevation is 950'.

Weather Decision: I will be at home on the prior Friday evening if anyone wants to discuss with me whether it is a go or not. The final decision will be made at 8:30 on Saturday morning based on the weather forecast and how it looks then. Call me before 8:30 if you are uncertain, after that time I will depart and leave a message on my answering machine as to the plan.

Disclaimers: This is a private notification of an unofficial gathering at Randle-Kiona Airpark. Only those to which an invitation has been extended may attend. All people flying in do so at their own risk and neither myself nor the Airpark may be in any way held liable.

### PITOT TUBE BRACKETS FOR SALE

by Scott Brown

nightmare@aol.com

Hello fellow RV-ators!

My name is Scott Brown. I am building the Van's RV-6 and loving every second of it. I have designed a Pitot tube bracket and have decided to sell them to the RVers at a fantastic price.

The bracket is made from streamline tubing and welded by a retired Pratt and Whitney employee who specialized in precision aircraft welds. This bracket is really beautiful. We have all spent countless hours perfecting our dream machines. This pitot tube bracket is exactly what we need to add the perfect finishing touches. It includes photographs, easy to read installation instructions, and all the parts necessary for installation, even for a Retrofit!! The cost is only \$60. Please forward this information to all your RV builders, so that they can order theirs today!! Orders have been coming in steadily from all the RV troops, and I look forward to working with you.

### HANGAR HUMOR

#### Oops

*found on the internet*

On my first solo cross country, I was flying north through the San Fernando Valley and trying to keep Track of Traffic callouts. Apparently there was a controller with a similar problem. He had managed to confuse a commercial jet on approach to Burbank with a private plane that was transitioning south across the valley. For a period of about 90 seconds, he was calling out instructions to them that weren't quite what they wanted...and finally, The commercial jet pilot inquired as to where he was being sent.

There was a brief exchange about intentions, followed by an "oops" and 30 seconds of silence. The next voice I heard on that frequency said: "Attention all aircraft. Previous controller no longer a factor."

WANTED Ads are FREE.

Carburetor suitable for 150-160 HP Lye 0-320. Conical Engine mount for RV-4. Russ. 503-606-0342. 2/97

Wood prop for RV-6A w/ 180 hp Lycoming. Prefer climb prop, but will consider cruise prop. Russ. 503-606-0342. 2/97

Volunteers: For all of you RVers out there, as you may know, we are rebuilding the original RV-3 for donation to the EAA museum this summer. Gary Standley had it in his garage, and with some occasional help, has gotten a long way on it. But we NEED HELP. It is now in the Chapter 105 hangar and work parties meet every Thursday night. Contact Don Wentz (696-7185) or Gary 70/96

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THE TOOL EXCHANGE

*The new Toolmeister is Brent Ohlgren, 288-8197. Let him know if you have jigs, tools, shop space, etc. to loan, exchange, or otherwise provide - at NO COST - 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.*

Home Wing Tools available: Hole template for instrument panel, Wire crimping tool and die, Brake lining rivet set tool, and Tune-up and Annual Equipment (Compression check, Mag timing light, Timing dial, Mag adjustment tool, Plug gap-per, high voltage cable tester, and Plug vibrator cleaner). Contact Brent Ohlgren, 288-8197.

Cutting wheel mandrel, custom made by Stan VanGrunsven to use for cutting your canopy. Knob on the outside makes it much easier to hold steady and not screw up that expensive piece of Plexiglas. Mike Seager currently has one of them, I have the other. I also have some graduated diameter screw dimple dies that Stan made -- useful for dimpling the tight spaces in the wing spar aft of the fuel tanks. Randall Henderson 503-297-5045.

Joggle tool, Rion Bourgeois. 646-8763

PropTach (optical electronic tach, use to calibrate your tachometer) - Butch Walters had it last - 360-636-2483

Engine Stand -- Don Wentz 503-696-7185

Engine Hoist. Norm Rainey

Aileron bracket locator tool. Adjustable aileron push-pull tube (for measuring the exact length to cut the real ones). Randall Henderson 503-297-5045

Precision chemical scale, for measuring pro-seal. Brent Anderson, 646-6380. Surveyor's transit

level - handy way to level wing and fuselage 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 Table saw

taper jig, for tapering wing spar flange strips. Carl Weston 649-8830.

FOR SALE/ RENT Ads are FREE.

RV-6 kit. \$8,000 Complete. Also an RV-6A Conversion kit that has been started - other extra's included. Harmon Lange. 503-397-1478. 3/97

ATS Hand Rivet Squeezer, 2" deep swivel head yoke. Model 5011-1. \$75. Bill 503-829-2856 after 6pm. 3/97 RV-6 with Lycoming O-320, 160 hp. \$49,000. Farn Reed. 541-471-6289. 2/97

Lycoming O-320 A2B. 150 hp. 1400 hrs on first run. Salvaged from takeoff accident in BD-4. Prop struck mud at low power...crank runout dials okay. Rear carb model not suitable for RV-6A. \$6500. Russ. 503-606-0342.2/97

Two David Clark H10-30 headsets with soft covers. Used approximately 4 hours. \$130 each. Craig Gee. 360-887-0823. 2/97

RV-6 Fuselage jig - 2 planes built on it. \$225. Steve Householder. 503-297-8760 days. 503-662-3697 eve. 1/97

Encounter with Impala has re-arranged priorities! RV-8 Empennage, finished. Buyer mounts weights and installs fiberglass. Get a head start on a great airplane. Ken Scott. 503-646-5117 days, 503-645-1594 evenings. 12/96

25 AH Gel Cell Batteries (used)-Free for the asking. Gary Dunfee. 631-7262. 11/96

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

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**"Home Wing" Newsletter Subscription/Renewal**

Please fill out and mail to **Jerald & Kathy Hall, 32034 J.P. West Rd., Scappoose, OR 97056-2600**, along with \$10 for renewals or new subscriptions. Please make checks payable to Kathy Hall. If you are renewing, you only need to give your name, date, payment method, and any other information that has changed. Use this form for address changes too.

Name \_\_\_\_\_ Spouse's Name \_\_\_\_\_

Address \_\_\_\_\_ Home Phone \_\_\_\_\_

City, State, Zip \_\_\_\_\_ Work Phone \_\_\_\_\_

Pmt (\$10/yr) Check \_ Cash\_ Info change only \_ E-mail Address.

Project (RV-3, 4, 6, 6A, 8) \_\_\_\_\_ Comments?\_\_

Progress: \_\_\_\_\_

Tail In Progress \_ Finished \_ \_\_\_\_\_

Wings In Progress \_ Finished \_ \_\_\_\_\_

Fuselage In Progress \_ Finished \_ \_\_\_\_\_

Finish In Progress \_ Finished (i.e. flying) \_ \_\_\_\_\_