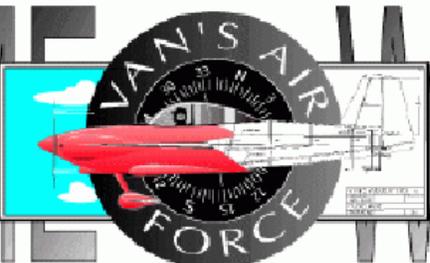


HOMEWING



Newsletter of the Home Wing of Van's Air Force

Builders and Fliers of Van's RV Series Aircraft



The literal version of the “editor’s hangar”. This is the state of the project at it’s 2nd anniversary. Sure looks more like a plane with the wings on, too bad they have to come back off!

Editor's Hangar

The latest at Van's

Don't you just love living here near the center of the RV universe? Every few weeks I make a lunchtime run over to Van's for parts. Some times I'll also sneak over to the prototype shop to look at something on one of the planes. I find that it really helps to *see* a particular assembly I'm a bit confused about. Of course I get to see their craftsmanship on the particular part which helps set a finish standard for me as well. The guys over there have been surprisingly tolerant, and in turn I try not to bother them or wear out my welcome — they have their jobs to do as well.

Anyway, while there last week I happened to get the scoop on a few new things (remember, you read it here *first*). Ken Krueger, Phil Dyke, and Scott McDaniels were there marveling over the new RV-9 fuselage. They said “hey, take a look”. Geez, the thing is totally prepunched! Even the bulkhead ribs are prepunched — it looked like you could just cleco the whole thing together. And here I thought the 9 just used the 6 fuse... wrong.

Then, in a conversation later that day with Ken Scott, I mentioned what I had seen and asked if they were going to retrofit the new RV-9 fuselage to the RV-6. “Nope, that'd be the RV-7”. Oooh, a new model, I get

(Continued on page 2)

(Continued from page 1)

it! “Ken, is this a secret?”. “Not especially”. Ok folks, now you know. With SNF and OSH a ways off I’m sure you’ll read an announcement in the RVator one of these issues.

For me this is just another indicator that constant evolution continues at Van’s. They never seem to never stop, just quietly keep pushing things along. Just in the time I’ve been building my RV-8 I’ve noticed that many parts on the newer kits are now pre-made, and they never even tell anyone, they just start shipping the new parts.

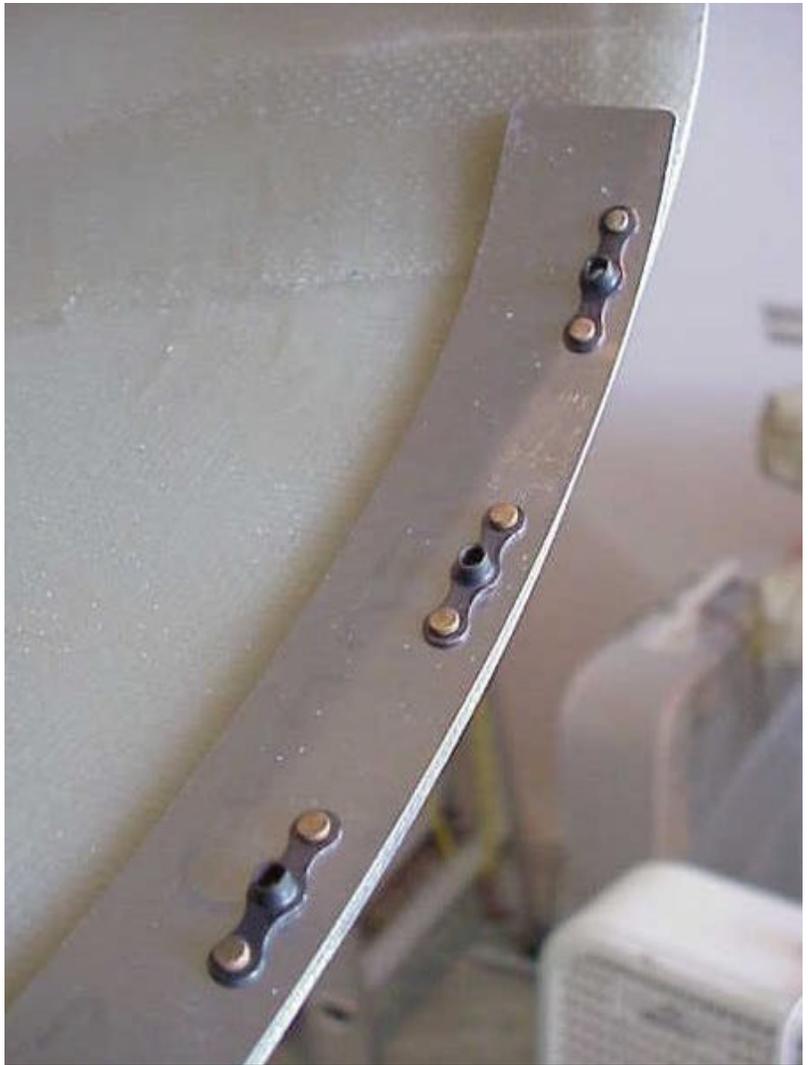
You RV-4 and early RV-6 builders look at us eight builders and think we are spoiled by all the prepunching. Hey, wait until you see the full RV-9 kit! Once people are building full RV-9 and RV-7 kits us eight builders will get to join the ranks of you cranky old-timers and can look down our noses at the new generation kit builders and say “I remember when we actually had to *build* the airplane”. Of course the new guys don’t say anything, but are thinking “yea right, who cares”.

Diary of a project

Two years

I spent part of Thanksgiving day in the garage drilling and countersinking the platenuts and reinforcing strips in the process of mounting my wingtips. Then I realized, hey, it was two years ago today that I drilled my first hole. Indeed, Thanksgiving day 1997 was when I began construction of my project. All in all I guess I feel pretty good about my progress. There have been several periods where I haven’t been able to work on it at all for weeks. And here I am celebrating my 2nd anniversary working on wingtips with the wings mounted and the basic airframe done (see photo).

Now that most of the airframe parts have come together I must say that I am still truly amazed at how all this stuff fits together. You work away for months on some sub-assembly that is then put on a shelf for months, or even years. Then you take it out and mate it to another sub-assembly, and it *fits*. It’s downright scary, not like anything I’ve ever built before. Example; I built my wings and set them aside, then I built my fuselage and moved on to other things. Then I mounted the wings to the fuselage, which fit perfectly, and went to install the wing root fairings. One end of the long fairing strip clecoes to another fairing which is clecod to prepunched holes in the wing skin. Then the fairing strip



Closeup of platenuts and reinforcing strips inside wingtip. 24 on the top, 22 on the bottom, all rivets countersunk, and a great way to spend your weekend. Oh yea, and there’s two wingtips.

wraps all the way round the wing leading edge and goes 2/3 of the way under the wing where it’s prepunched hole matches the bottom skin overlap hole *perfectly*. How do they do that? My hat is off to the crew at Van’s.

Another thing; I had always heard how bad Van’s fiberglass parts were; they never fit, and many builders ended up building their own. Maybe I’m a beneficiary of their continual improvement, but my fiberglass parts, except one, fit very well. Specifically, empennage fairing and wingtips fit great. The canopy skirt however is another story. The part is well made, it just doesn’t fit very well. Of course I haven’t tackled the cowling yet, but the odds are with me that it will be a good fit.

Keep building!

...Randy



Meeting coordinator:
 Randall Henderson
 503-297-5045
 randallh@home.com

MONTHLY MEETING:

(2nd Thursday every month, various locations, 7:00 pm)

Place: Engine Components Northwest
 1260 NW Perimeter Way
 Troutdale, OR
 Troutdale Airport (TTD).

Date: Thursday, December 9, 1999

Time: 7:00 pm

The December meeting will be at Engine Components, NW inc., an aircraft engine component part overhaul and repair shop, located on the Troutdale Airport. The general manager and sales manager will be there to show us around, and it should be quite interesting, as it will give us chance to look into the inner workings of our powerplants.

From Portland:

Take I-84 east, Exit Troutdale (exit 17), continue past the gas stations, pass under I-84 (left) then straight to go around east end of airport. Enter the parking lot near the control tower, EIC is to the North of the terminal.



From the Air:

Punch "TTD" into your trusty GPS and go to where it points you. Be sure you have a current database or flight guide; the tower people get cranky when you call them on the ground frequency and tell them you couldn't reach them on the (old, obsolete) tower frequency.

Tentative future meeting schedule:

January: t.b.d.
 February: t.b.d.
 March: t.b.d.

Meeting places are always needed; if you'd be interested in hosting a meeting please contact Randall Henderson at 503-297-5045 or randallh@home.com

EAA CHAPTER 105 Pancake Breakfast:

First Saturday of every month at Twin Oaks Airpark, 8:00 am, \$4.00 (always lot's of RVs to look at too!)

This month: 12/4/99

EAA CHAPTER 105 Monthly Meeting:

Third Thursday of every month at the EAA 105 hangar/clubhouse, Twin Oaks Airpark, 7:00 pm

This month: 12/16/99

EAA CHAPTER 902 Monthly Meeting:

Second Wednesday of every month at the Mulino Airport in the OPA building. For info call Gary Sparks at 503-251-0843

This month: 12/8/99

REMINDER—SEMINAR NOTICE



Cost: \$150
When: Jan. 15 & 16, 2000
Where: Hobby Field, Creswell Oregon
Contact: Ross Mickey
 541-345-8400
 rmickey@ix.netcom.com

Send your name, address, phone & \$50 deposit to:

AeroElectric Seminar
 P.O. Box 5122
 Eugene, OR 97405

For further information call Ross Mickey or go to www.aeroelectric.com.



Bill Benedict takes the group through the fine art of performing a compression check.

November Meeting Recap

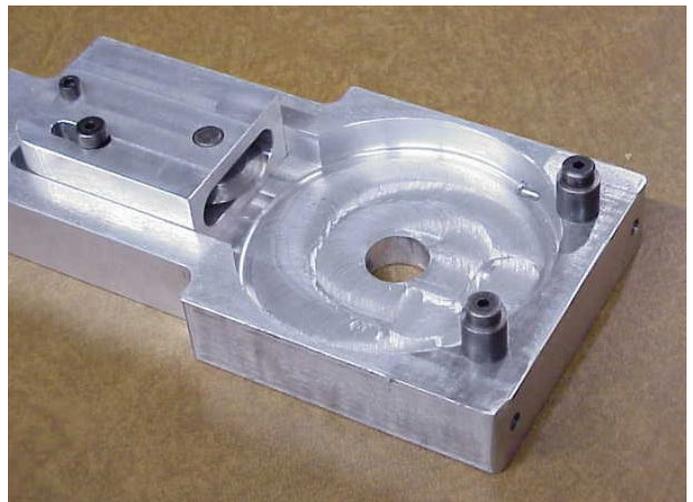
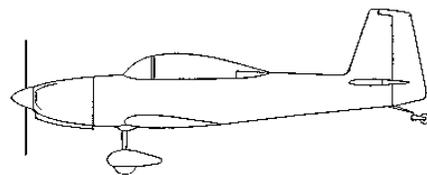
Randall called the meeting to order and guests were introduced including one new member, Robert Miller who bought an RV-4 project. Dan Benua gave us more detail on his first flight, he now has 11 hours. Stan Vangrunsven donated an oil filter cutter that he made himself to the group's tool set.

The main focus of the meeting was the conditional inspection being performed on Gary Hansen's RV-6A. Bill Benedict reviewed what is required, and the legalities of who can perform it. Then he demonstrated how to perform a compression check. Unfortunately Gary has a couple of soft cylinders... probably rings on one and a bad exhaust valve on #3. Sorry Gary, sounds like the cash register is about to ring.

Bill has developed a conditional inspection checklist he designed specifically for an RV. He plans to publish it in the future, although anyone wanting a copy before that can contact him at Van's for a copy.

Thanks to Gary for volunteering his plane for demonstration, and to Chapter 105 for the use of the hangar and the hotdogs!

...Randy



Stan V. made this oil filter cutter which he has donated to the group.

VFR to IFR in no Easy Steps

by Brian Moentenich

My RV-6A first flew in September of 1997. At that time, I had about 150 hours of total flying time. I didn't know what type of flying I liked to do or what I really wanted to do with flying. I just knew I loved it. I had thought about eventually getting my IFR ticket and someday setting up my plane for IFR. When building my panel, I even thought I would leave space for all the required "goodies". Well, that didn't work out. I did install the standard gyros and a heated pitot tube however.

Last fall, I decided to build a new panel which was IFR. I wanted to learn IFR in my plane. I knew I did not want an IFR GPS - at least not initially. It was immediately obvious that space on the panel would be a limiting factor. I decided early that I would not have an ADF. I was sort of thinking along the lines of one VOR/ILS/GS unit, a second radio, and a DME. I even ordered a DME and later decided against it. Lots of folks told me I really needed a second VOR receiver. After quite a bit of thinking and panel layout, I decide to forgo the DME, keep my KLX-135A (VFR GPS/Com), get a KLX 125 (Nav/Com), get a Terra TMA 350D audio panel (with marker beacon receiver and intercom), get a Terra TN-200D (VOR/LOC/GS) Nav receiver, a Terra Tri Nav VOR/LOC/GS indicator, and replace my King KT-76 transponder with a Terra TRT-250 D unit. I bought the Audio panel from Vans, the KX-125 & VOR antenna (used) from Don Wentz and everything else from Pacific Coast Avionics. I preferred to stay with King avionics - but there simply wasn't enough room. As it was, I had to move my fresh air vents off the panel along with all my breakers and switches. I also bought a digital volt/ammeter.

The new avionics required a 2nd Com antenna, a VOR antenna, and a marker beacon antenna. Both VOR receivers and the glide slope receivers are fed by the VOR antenna. My RV is starting to look like a porcupine. After laying out the panel, it was obvious one of my 2-1/4" instruments had to go. Bye bye to the manifold pressure gauge! I also replaced my non-working blind encoder with a Terra AT 3000 encoder.

I had painted my original panel light grey and used black lettering directly on it. That was a mistake because of all the reflection I got from it at night. I now under-

stand why most panels (and all instruments) are black with white lettering. All of the placarding and markings were to be on removable plates to make changing them easier (especially the switches and breakers). I now have 8 switches and about 16 breakers.

As my KLX-135A accepts input from a blind encoder, I decided to take advantage of that to give me a sort of back-up altimeter. After making the mounting bracket for panel and installing all of the trays for the avionics, I hauled it and all the avionics boxes to Troutdale Avionics for all of the inter-wiring. It took about 2 weeks to do and cost \$1400.

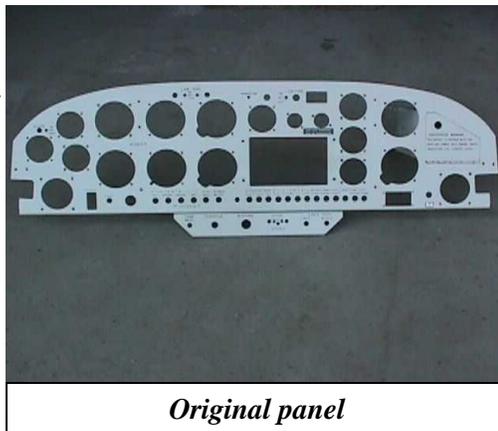
I had the new panel powder coated with black wrinkle type paint. I kept the map/glove compartment since I found it so handy. Along the top are idiot lights for low fuel, low oil pressure, and low volts. I also plan to install a low vacuum pressure idiot light as soon as I figure out how to do it. I used the jumbo size red, 12 volt flashing LEDs (Wacky Willy's) glued to red translucent plastic for the idiot lights. They have white lettering on them. Total cost was \$2. I also added a cigarette lighter receptacle and connected it directly to the battery (with an in-line, 10A fuse). I can now easily hook up a battery charger or use it for power without turning on the master switch.

Installing all this stuff got to be more work than I expected. I ended up practically re-wiring the whole plane. I added three small busses on the back of the panel. One was for ground wires, one for panel lights, and one for 12 volt panel power. The whole job took about a month. When I first turned it on, there

was no smoke. There weren't any lights either. Talk about being frustrated! I expected the whole shebang to work perfect. Turned out a 2 amp circuit breaker I bought was off permanently. I should have checked it before installation. Things seemed to work ok after that.

I flew it down to LA the end of March and started to get intermittent messages from my GPS showing: "Altitude Failure". Hmmm, wonder why that is happening. ATC folks never complained about my transponder. I wanted to get the IFR installation signed off prior to beginning learning how to use it. My IFR training started out with working in a simulator - so I figured I had plenty of time to get the installation certified. I had Ray from Microtech come to my hangar to do the check out. Ray has a mobile shop and goes to FBO's like Right Approach in Troutdale to take care of their planes. He started with checking my pitot-static system for leaks. There were a lot of leaky connections. I removed

(Continued on page 6)



Original panel

(Continued from page 5)

my altimeter to get to connections on the VSI & heard something loose inside it. I sent it to the shop to be checked. It was a dirt screen knocked loose from screwing the nylon tee fitting too far in (\$190 & 2 weeks). Ray came back and we tried again. He got erratic altitude indications. It was the encoder he said. Back it goes to Pacific Coast Avionics. Of course, this type isn't made any more – so I need to get a different brand. The mounting arrangement is different and so is the wiring connection. I install it. Ray comes back again and we continue. Still getting erratic readings. Seems to work ok when the GPS is turned off. Hmmmm, must be the transponder he says. I point out that there aren't any diodes installed in the back of the transponder tray. The installation manual indicates that whenever an encoder is connected to more than one device (as is mine), you need diodes installed between the encoder and each device. Troutdale Avionics had not installed them. This now appears to be a huge job as these diodes must be installed on the back of the transponder tray.

By now, my IFR instructor (Steve) tells me we're ready to fly in clouds. I tell him the plane's isn't ready. I'm envisioning yanking out the panel to install the diodes. I go to visit Pete at Troutdale Avionics. He says he can make up a wiring harness with diodes if I can pull out the 15 pin socket in the back of the tray. He doesn't think it will work though. I help Pete and we make up a special wiring harness with the @# diodes. I install it & test fly it. It looks like Pete was right. I go visit him again. He bench tests my transponder. Its bad he says. At least the warranty is in effect because its new. Back I go to Pacific Coast Avionics with the box. They stick a new chip in (takes 2 weeks). Back comes Ray. Did I mention that he lives in Hood River and drives a motor home with all his test gear in it? I haven't even asked him how much money he is going to want yet. This time everything checks out. And he signs off my installation. The entire process took ten weeks. Two of those were spent on a trip in the plane to Palm Springs and Las Vegas – but that's' another story.

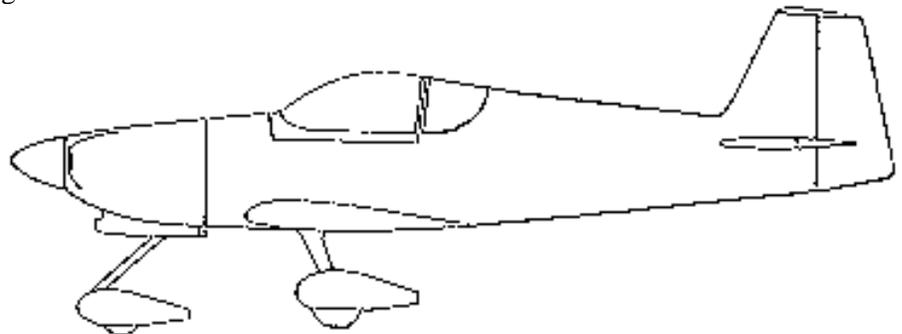
Of course, by the time I'm ready for IMC, my instructor takes off on a two week trip. I haven't had an IFR lesson in 5 weeks. I feel like I've forgotten most of what I learned (I didn't). Ray only charged me what he would normally charge for an IFR checkout (it was less than \$200).



New IFR panel

Was it worth it? For me, its what I wanted to do – so yes. How stable is the plane flying IFR? I'm not well qualified to say as I have not flown IFR approaches in any other plane. I reckon I'm about at the halfway point in my training and can fly the approaches pretty good most of the time. Steve says it's a little less stable than a C-172 – but not by much. Not having DME is pretty limiting. I practice them using my GPS though. If I keep flying IFR, I may eventually replace my VFR GPS with an IFR model in a couple of years which will solve that problem. Flying NDB approaches isn't required for the flight test anymore. Steve thinks it will not be a problem in doing the flight test in my RV. We'll be done by mid October he says. Sure we will I say (no way, I think)!

...Brian



Tech Tips

Crank plug technique

By Dan Benua

Builders mounting a constant speed propeller on one of Van's new engines, or any engine that was previously set up for a fixed pitch prop, will find that they need to remove a plug from the end of the crankshaft. Removing the plug allows oil from the governor to flow into the prop hub.

My first thought was to just puncture the plug with a sharp punch, screw in a sheetmetal screw, and yank it out with pliers. I thought that punching the plug would prevent metal chips from getting inside my crankshaft. No way! The plug is at least .063 thick and made of pretty good steel. Also, the idea of beating on the end of the crank with a very large hammer was very unappealing. You really want to make sure it pulls out straight and that you don't bang up the end of the crank trying to lever it out.

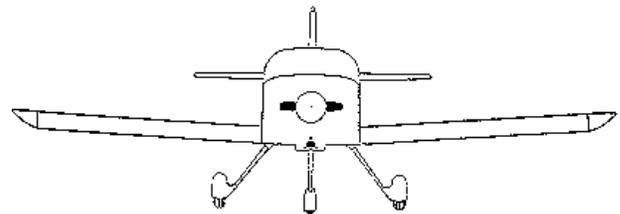
I ended up drilling a 5/16" hole in the center and tapping it for a 3/8" bolt. If you are careful, nearly all the drill chips end up on the outside of the plug. Next I

cut and drilled a 3" square of 1/2" plywood, put a 3/8" bolt through it and threaded it into the tapped hole in the plug. Turning the bolt with a wrench easily pulled the plug to the end of the crank where it could be popped out by pulling the edges of the plywood.

A fair amount of preservative oil burped out of the crank when the plug came out, so be ready to catch it or you'll have a puddle on the floor like I did! Any chips from the drilling and tapping that ended up inside the plug should be washed out when this happens.

So you ask, why did I remove the crank plug now? I'm about to mount the propeller, and it is possible that I might not remove it again. If I do, I can tape over the crank end to protect it. I just thought it would be a shame to have to remove the prop again just to take that plug out.

...Dan

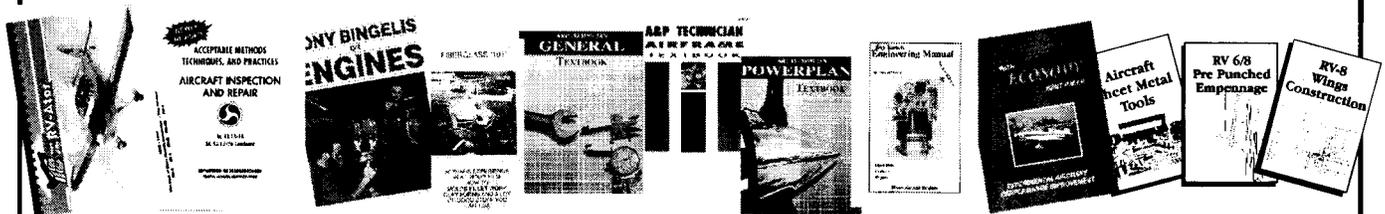


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Classifieds are free to Home Wing members. Ads will run for three months. Send to editor by e-mail or mail. Renewals ok, just let editor know. Date at end of the ad is last month ad scheduled to run.

FOR SALE

RV-4 Lycoming O-320B2B 160HP, 1,070 TT/SMOH, Pacesetter 68" wood prop, II Morrow Apollo 704 Digital Com, side mounted and hard wired Garmin 90 GPS. \$38,950 Firm. Call (503) 807-9805 for additional details. 1/1/00

RV-3 - Basic day VFR with KX99 wired for headset operation, Terra xpndr and encoder, and Garmin 95 XL, all running on 12 volt system. O-320, Pacesetter prop. 375 SMOH and TTAF, \$14,750. Contact Jack Pierson, 503-628-0215, 3/1/00

RV-6 kit less finishing kit - Emp complete, wings 80%, fuselage still in crate. Also have the fuselage jig. \$8,000. Must also sell RV-6 Quick build with Emp completed, dual brakes, elec tim and flaps, extra set of wing tips (the heavier ones), larger wheel pants. Kit complete less engine. \$17,900. Also have an O-320 with 1000 SMOH for \$6800. Rainpoof@aol.com, 10/99

Wing & Empennage rack — Storage rack for wing and empennage parts on casters. \$40. Contact Greg Halverson 503-591-0105 12/99

ATS Rivet Gun — New \$150, sell \$75. Brent Ohlgren 503-288-8197 or obrento@mail.aracnet.com

Electronics International EAC-1 - EGT/CHT/OAT (or carb temp) gauge, and RS4-2S 4 way, 8 channel switch. Barely used. All manuals and instructions included. Does not include any probes. Will sell for \$300. The Gauge without probes retails for \$375. The switch minus probes comes to about \$75. A good deal even without the switch! Contact Randall Henderson randallh@home.com or 503-297-5045

Duckworks Landing Light Kit - \$55.00 Contact Brent Anderson 503 598 6132 Days 503-646-6380 Eves brenta@pcez.com, 12/99

Hanger Available for winter — Chehalem (17S) Contact Rod Kimmell 503 985-0606, 1/1/00

Flightcom 40X Headsets, 2 pair — Used about 10 hrs, \$120 for both sets, includes carry case. Bill Christner, 503-829-2856, 10/99

Duckworks Landing Lights - Retro-fittable, light, easy installation. Kits start at \$69, discount for Home Wing-ers. Don Wentz, 503-696-7185

BuildersBookstore - Books and videos specifically for the RV builder and pilot. Call or write for a FREE catalog; (970) 887-2207, PO Box 270, Tabernash, CO 80478. Or see our web page at www.buildersbooks.com Featured item: 18 YEARS OF THE RV-ATOR is now available. New additions all the time!

BACK ISSUES are available at \$2.00 each including postage for hardcopy. Limited availability, contact newsletter editor. Adobe Acrobat versions free to members.

WANTED

RV-4 Advice — Seeking RV-4 help and guidance. Mid-fuselage stage on RV-4 project. If anyone wants to take the time to come down to Klamath Falls to look over my shoulder and give me a little guidance on my -4, I'd be willing to buy their fuel and breakfast or lunch. E-mail or call Jim Baker, bakerje@kfalls.net or (541) 884-5900 work, (541) 883-5701 home. 1/00

WANTED - Top half of the old style cowling. Slightly damaged is fine. Prefer longer fixed pitch style. Looking mainly for the top, but would in interested in a matching set if the price is right. Charlie. 360 577-6407 or e-mail: searose@kalama.com 2/00

Subscriptions Due

Mail subscribers: Your renewal date is in the upper right corner of your mailing label. Use the form at the back of this newsletter if there are any changes, otherwise just mail a check to the editor, or pay at a meeting.

E-mail subscribers: Look for your name and renewal date in the e-mail that the newsletter is attached to.

All subscription data is tracked in an Access database. Data entry errors can happen - if you find an error in your renewal date please contact the editor.

Use em!

Members are encouraged to take advantage of the classified section. Since it's free why not take a stab at unloading that unused airplane stuff. Besides, it's kind of interesting to look at all the odds 'n ends for sale.

Please note that the date at the end of each ad is the expiration date. They run for three months and then are dropped unless you want them renewed by notifying me.

...Randy

The Tool Exchange

The Home Wing owns a selection of tools for use by its members. The Toolmeister is **Brent Ohlgren, 503-288-8197**. Call either Brent to arrange use.

Remember:

- All use must go through Brent.
- You are personally (financially) responsible for any damage.

Home Wing Tools
HVLP paint sprayer
Hole template for instrument panel
Wire crimping tool & die
Brake lining rivet set
Tune-up & annual kit (compression checker, mag timing light, timing dial, mag adjustment tool, plug gapper, high voltage cable tester, and plug vibrator cleaner.
Aircraft scales — allows you to accurately weigh your beast and also determine CG.
Oil filter cutter—custom make by Stan V.

Other benevolent members also have tools they may be willing to loan. Let the editor 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.

Item	Owner/lender	Phone / e-mail
Custom cutting wheel mandrel (for cutting your canopy)	Stan VanGrunsven	
Prop tach (calibrate your tach)	Butch Walters	360-636-2483
Engine stand	Don Wentz	503-696-7185
Engine hoist	Norm Rainey	360-256-6192
Surveyor's transit level (handy way to level wing and fuselage jigs)	Bill Kenny	503-590-8011
Back riveting contraption (large, counterweighted bucking bar and suspension system and offset back rivet sets)	Bob Neuner	503-771-6361
Lead crucible (for melting lead for elevator counterweights)	Doug Stenger	503-324-6993
Table saw taper jig (for tapering wing spar flange strips)	Carl Weston	503-649-8830
48" pan break located at hanger PLS D-10 at Troutdale if an RV builder needs some metal bent.	Kevin Lane	503-233-1818

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Please fill out and mail to **Randy Lervold, 5228 NW 14th Circle, Camas, WA 98607**, along with \$10 for renewals or new subscriptions. *Please make checks payable to either Randy Lervold or Home Wing*. 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!*

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RV-4 Wings

RV-6 Fuselage

RV-6A Finish kit

RV-8 Flying

RV-8A

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Home Wing Van's Air Force
Randy Lervold, Editor
5228 NW 14th Circle
Camas WA 98607

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