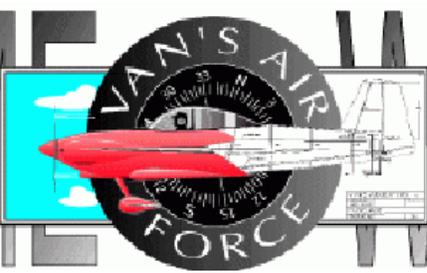
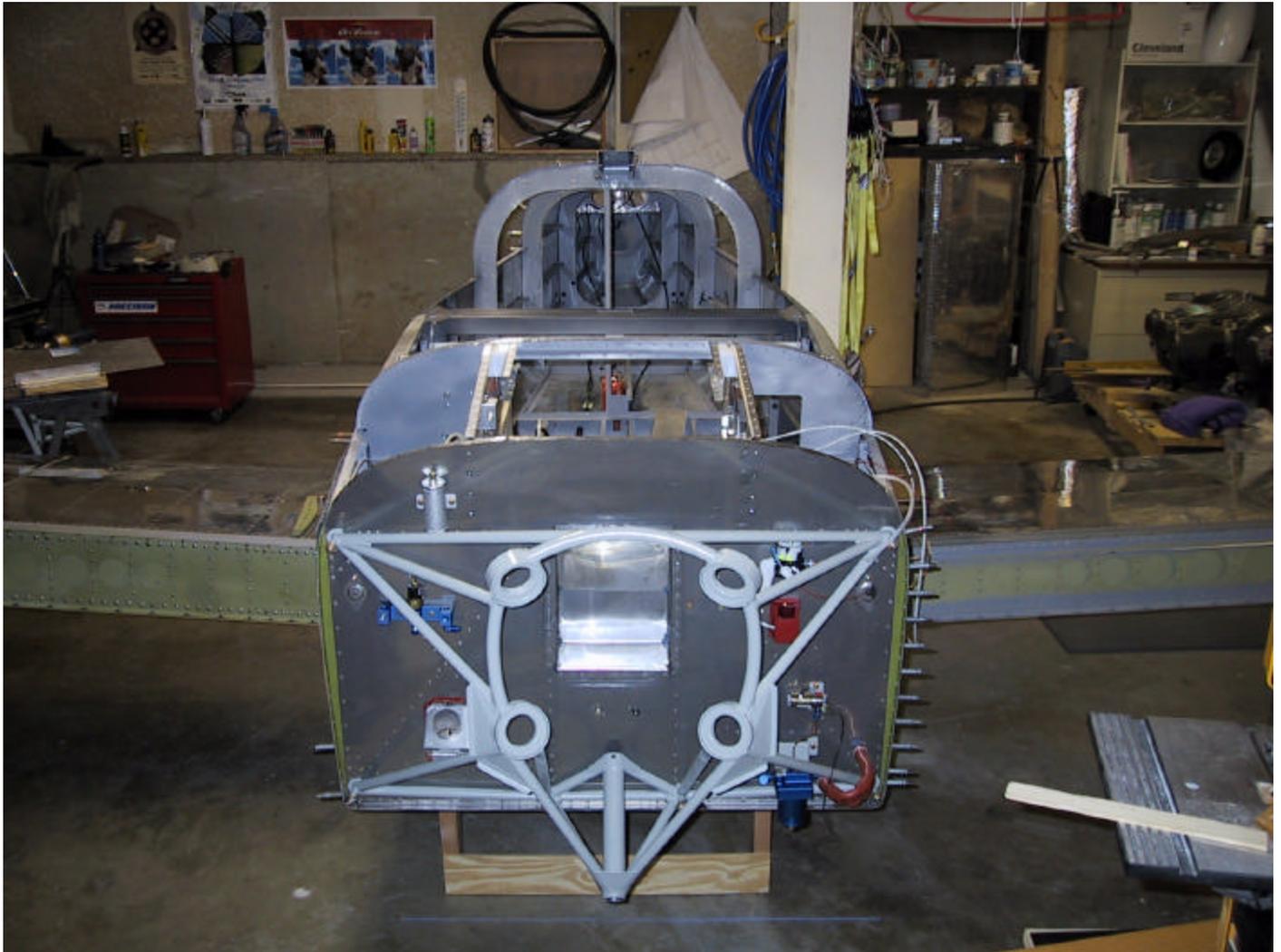


HOME WING



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



Robin Wessel was kind enough to host our November meeting. Since the RV-6A is so popular, and since he's done many interesting things with his, he agreed to write something up about his experience.

Anatomy of an RV-6A Project

By Robin Wessel

A friend once told me a joke, it went "how can you tell if there is a pilot at a gathering? - The pilot will tell you." I think that the same can be said of home-builders. Any opportunity to talk about engines, rivets, avionics, and flying will be taken no matter who the au-

dience is. Being a chief violator of compulsive RV obsession, I would like to take the opportunity to tell you about my RV project.

I was fairly new to flying with only 25 hours under my belt when I decided I wanted to build an experimental. After a \$47,000 test ride, the decision was cinched: an RV-6A would grace my garage for the next 3 years. In April of 1998 a tail kit arrived at my doorstep and so

(Continued on page 4)



Events Calendar

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

MONTHLY MEETING:

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

Place: Van's Aircraft
14401 NE Kiel Road
Aurora, OR
Date: Thursday December 14th, 2000
Time: 7:00 pm
Phone: 503-678-6545

Our first meeting at Van's new facility! Should be a good one, as I'm sure we're all eager to hear the latest on the RV-9A kit production and other new happenings at Vans.

DRIVING DIRECTIONS:

From Portland: Take I-5 South, take the Canby/Hubbard exit, turn left at the intersection (Arndt Road), then turn right (south) on Airport Road, go approx. 1/2 mile, right again on Kiel road, approx. 1/2 mile to Vans on the right.



Flying: The identifier is UAO. Van's is the new building near the south end of the field. Take the taxiway turnoff at that end, jog left, then right at the second taxiway you come to, taxi east between the blue hangars, park on the gravel or in the grass but NOT in the parking lot (cars go through there too).

Be sure to follow the published noise abatement procedures.

Future meeting schedule:

Jan: Randy Lervold's RV-8 project
Feb: Rob Hickman's RV-4 (tentative)
Mar: Bob Boring's RV-6A project (tentative)
Apr: t.b.d.
May: Phil Spingola's RV-6 project (tentative)

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, \$5.00 (always lot's of RVs to look at too!)

This month: 12/2/2000

EAA CHAPTER 105 Monthly Meeting:

Third Thursday of every month at the EAA 105 hangar/clubhouse, Twin Oaks Airpark, 7:00 pm. See www.eaa105.org for details

This month: 12/21/2000

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: 12/13/2000

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.

Bring your Wallets!

The new Van's Aircraft 2001 calendars should be available at the December meeting. Not counting Van's planes, there are no less than three Home Wing members' planes featured. You'll have to get a calendar to find out which ones!

Font Embedding

Here's a technical factoid for you. Heretofore many of us may have noticed some anomalies in the way the Acrobat version of the newsletter displays on your screens or prints out. Specifically, the headline fonts may have looked funny. This is because your system may not have the same fonts installed that I've used for the headlines. I have solved that problem with this issue by embedding those fonts in the .pdf archive. Hope they look better!

...Randy

Fandango in an RV-4

By Mike McGee

Some of you know about the trip I've been working on, or rather working on the plane to make the trip. It's a three and a half week jaunt to Venezuela via Florida. We'll be joining 15 other planes in Boca Raton and hopping from island to island, down to Angel Falls and back. No, I'm not planning to base jump Angel Falls.

This will be 25 days in a plane the size of a bobsled with wings. The organizer of the trip says there is always baggage space on some of the other planes. Some people actually use two engines to fly over all that water. We aren't alone in the single engine set. There are only four twins out of 15 planes. One of the planes is a Cessna 195, a plane with one ROUND engine (and some people thought I had kahunas to do this). You can check out the planes on the trip and our progress at a web site we thought would be fun to set up. Brian Goss is our web master and he will be updating the web site with progress reports and with any luck some email pictures along the way. www.teleport.com/~jmpcrftr/Main.htm.

Well, the plane's finally ready, the only thing that can hold us back now is the weather. We hope to catch up to the other planes in Boca on Sunday, November 25th. Monday the 26th we all head south east and will turn around in Venezuela. If the weather puts up a road block we plan to just wait it out and catch up with the rest of the group later. Both me and the plane are VFR so getting out of Oregon on Thanksgiving day is a crap shoot at best. So, everybody put in a word to the weather gods for a good weekend for us after Thanksgiving.

I am hoping to fly with the group from the start as each hop in the Caribbean is an international flight. Having never done this before the idea of being led around by the hand sounds pretty good when you are flying a plane that says experimental on the side.

If anyone is looking for us, we plan on being back about December 18th. I'm sure leaving the Caribbean



for Oregon in the winter will not be a difficult choice. If the choice is too difficult. Happy Holidays from the land of the Parrot Heads, we'll see you next spring.

...Mike & Diana
RV-4 N996RV, Aurora, OR

Oregon Air Fair

Those of you on the various Oregon email lists will have heard about the Luncheon meeting at 11:00 am on November 29 at the Columbia Aviation Assn. clubhouse (Aurora Airport), for the purpose of planning for next year's Oregon Air Fair. The planners seem eager to bring pilots' groups into this process, and I think it would be a good thing for our group to participate in.

With that in mind, I plan to attend the meeting, to "represent" the group. At future Home Wing meetings we can discuss what I've committed everyone else to do and you can all then go do it! :) Seriously though, I hope that group members can participate in the process, and help make the Oregon Air Fair an event not to be missed on the west coast.

Anyone who wants to attend the meeting should RSVP to 800-874-0102 or marilyn.i.lorance@state.or.us.

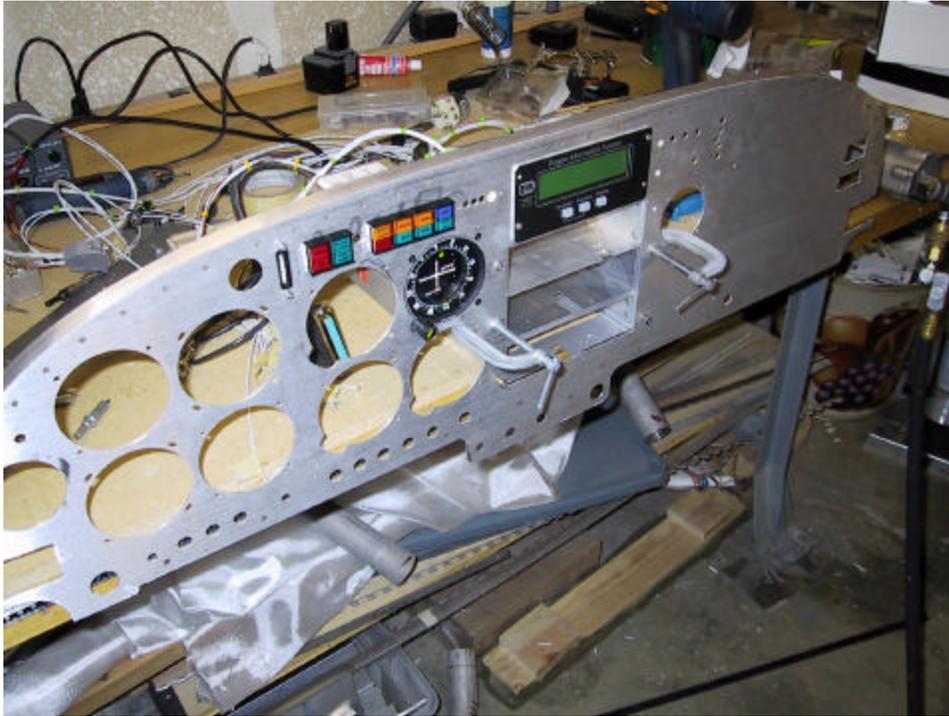
...Randall Henderson

(Continued from page 1)

far has been an incredible all-consuming learning experience. Like most RV'ers, I truly did not know what I was in store for.

Being a low time pilot (only 130 hours to date), I wanted a plane that was as familiar to the 152 that I have been flying as possible. Well familiar at least in the sense that it has a fixed pitch prop, side-by-side seating, and a fixed tricycle gear. I plan to use the RV as a do everything all-purpose fun flying machine that will take me across the country or around the patch with speed and economy. Since the RV-9A was just a twinkle in Van's eye, I naturally choose an RV-6A. Currently I am at the finishing kit stage, otherwise known as the "spend a bunch of money, scratch your head a lot, spend a bunch more" stage.

To be installed up front is an Aero Sport 0-320 from popular engine builder Bart Lalonde up in Kamloops, BC. For those considering this engine, there is a 6-month lead-time, so be sure to get your order appropriately. Bart can customize the engine however you want. Sue, who works with Bart, sent me a "menu" of engine options listing just about anything a die hard RV'er would drool over. Everything from chrome covers to all the various electronic ignition systems can be easily optioned and added to the order. I wanted as vanilla an engine as possible, so a 0-320D2A suited me just fine. I wanted to leave as little "experimental" as possible up front. Be sure to request, as I did, a custom color paint job for the engine. Bart uses PPG Concept paint and my Continental gold and Lycoming gray case matched up beautifully. Total tab for the engine- \$13,100 (March 2000 pricing). I have yet to hang the engine on the plane, but I have mounted all of the required accessories on the firewall. I made careful measurements of the rear of the engine and projected the required locations using a CAD program. The



idea of having to remove the engine after initial install did not appeal to me. Hopefully everything will connect together without any mismatches—I'm keeping my fingers crossed.

My computer hard drive is literally littered with hundreds of CAD file iterations of the panel. Printing them out full size, taping them to the blank panel and make buzzing noises really helps. The final configuration turned out to be a combination of wants versus what I got a good deal on. I have spent the last six months scouring the various auction sites, Trade-A-Plane, and avionics dealers patiently waiting for the best deal to cross my path. I became a bit of expert in avionics learning all of the requisite jargon. The avionics industry is very different from the PC industry—prices go up with time! Since I hope to get my IFR rating in my RV, I opted to spend a little more on the panel with a full gyro/nav/gs panel crowned with a Garmin 300XL approach approved GPS. Before you commit

to any avionics for your project be sure to get on the web and download the installation and user manuals. This can give you a good idea about the unit's capabilities and what's required to make them work together. I was about to purchase a UPS avionics GPS for my project, but found out that I would have to spend another \$260 for a serializer for the altitude encoder and spend an extra \$150 a year for database upgrades.

For engine instrumentation I decided on the EIS 4000 from Grand Rapids Technologies. I am really impressed with the quality of the system. The harness is pre-assembled and all of the senders/probes are of the highest quality. The instrument will even provide fuel level for my resistive fuel senders (I understand that capacitive systems work as well). My only two complaints with the EIS are that the backlight is not adjustable and the fuel flow option does not provide serial

(Continued on page 5)

(Continued from page 4)

data for my GPS. Because my project is IFR, I need to install a VOR receiver. I choose a King KX-125 and coupled it with a King KN-75 remote GS receiver (got a good deal on e-bay) and a King 209A indicator. Nothing impresses your wife more than when you tell her that a 1.5Lb plastic and aluminum box with a couple of blinking lights costs more than a week long Hawaiian vacation. A cool thing about KX-125 is that it will accept 3 auxiliary audio inputs so I do not need to install an audio panel. Additionally the unit will provide an alternate OBS when I use the primary OBS for the GPS. Part of the IFR requirements for GPS is to have an annunciator and switches for the GPS in the primary scan area. I cringed when I found out that the I would have to shell out \$450 for a GPS annunciator. Figuring I could do better for less, I decided to build my own using lights and switches from Northern Airborne Technologies. These little lights are pricey at \$30 but they really look cool (Aerospatiale uses them in their planes). In hindsight, I should have just saved the headache of configuring relays and diodes and just paid for the ready made one.

I was not prepared for the amount of time required to wire the avionics, using over 300 feet of wire in the process and sniffing plenty of solder fumes. I think that I have accelerated my need for glasses trying to read the little numbers marking the locations on the connectors. At one point I was scratching my head for hours wondering why the GPS would not work correctly with the CDI. After a couple calls to Garmin, it turns out there was a mistake in the schematic. So much for TSO'd/STC'd documentation. To mount all of the instruments, I took advantage of an offer to have it laser cut were I work. I am told that the laser cutter could hold a tolerance of better .008". Taking advantage of this, I had all of the intricate keyways in the switch holes, and the ovals screw holes for the gyros cut into the panel. My first attempt at cutting resulted with the laser shutting down. This was due to the mirror like finish of the Al-clad aluminum. A sanding of the surface on the second attempt resulted in a perfect cut. I am told that there are a few shops in the Portland area that can laser cut for \$75-\$150 depending on the complexity. By the way, if you need a copy of a CAD program, you can download a free copy of TurboCad on the web. For panel layout work this fully function program provides everything one would need for free! In total I have spent about \$9,000 for all of the avionics and engine instruments including Angle of Attack, fuel flow, 2 COM's, NAV/GS and IFR GPS. Not bad when you consider that one of the local avionics shops charges \$1,500 just to wire one GPS.

Ideas that I have picked up:

- There is nothing worse than a sweaty pair of cleko pliers especially after you have are just about to remove another hundred clekos. I dipped all of my cleko pliers and bucking bars in Plasti-Dip (available at Home Depot). Plasti-Dip gives my tools a nice, easy to grip rubber finish.
- To speed the riveting process and to make your significant other's riveting experience a little more enjoyable, use plenty of riveters tape. I prepare the sheet by cleko-ing every other hole and then placing the rivets in the remaining holes and tape them. This speeds up the riveting, allowing you to drive in assembly line fashion.
- A common machinist practice is to use layout die and a scribe to mark accurate lines in metal. I don't have any layout die handy but a wide marker provides a handy substitute. Cutting using a fine scribe line provides a much better reference than a Sharpie.
- There are a few items that are bolted on but other parts that share the same bolts must be removed frequently during assembly. A perfect example is the mounts for the control sticks that share the same bolts as the spar. To make subsequent re-assembly easier, I opted to epoxy the parts together during initial assembly.
- I use a table saw to cut aluminum using a special 300 tooth aluminum-cutting blade. Using the table saw gives me much more accurate cut than a band saw. The blade is available at Home Depot for less than \$20. I have cut .187" angle stock producing a nice accurate cut. Be sure to wear your obligatory safety glasses.
- Pick up a circle template if you don't already have one. They are readily available at many office supplies stores, and prove indispensable for finding centers of holes and marking radii for cuts.

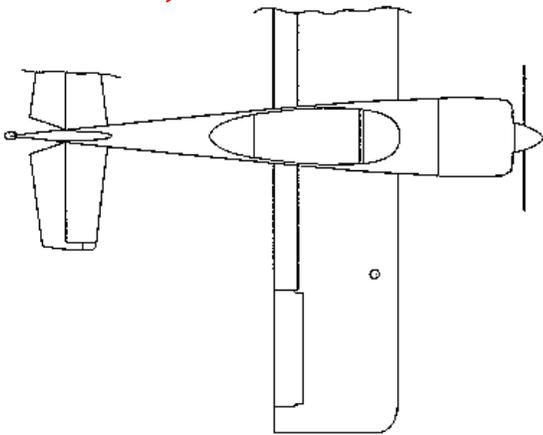
Well, I have proven twice to myself that I have seriously underestimated the time required to complete my project resulting in some very expensive airplane parts lying around for months. Hopefully, I will be up and flying my obsession before the end of next summer.

...Robin

Flying Activities

Coordinator: Randall Henderson

SUSPENDED FOR THE WINTER.



EAA Technical Counselors

Listed below are our Chapter 105 Tech Counselors:

Randall Henderson

503-297-5045, randallh@home.com

Dave Lewis, Sr.

503-690-8237

Don Wentz

503-543-2298, jwentz@columbia-center.org

EAA Technical counselors wanted! There are more and more new builders these days, and the three Technical Counselors we have could use some more help. If you've finished an RV, or hold an A&P rating, or are otherwise qualified under the EAA Technical Counselor guidelines, please consider signing up for the program, and adding your name to the list of EAA Technical Counselors available to the Home Wing and local EAA chapters.

1/1/2001

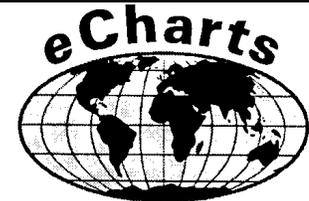
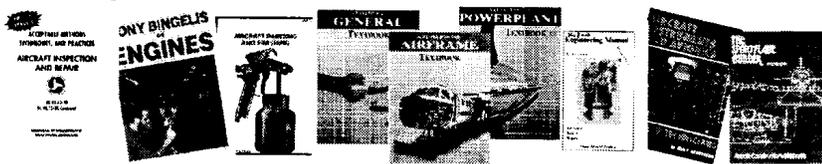
Builder's Bookstore
for the builder, technician, & pilot
<http://buildersbooks.com>

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 - 43.13-B Accept. Methods 18.95
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 - Bingelis - On Engines 24.95
 - Sky Ranch Engineering Manual 19.95

- AeroElectric Connection \$28.80
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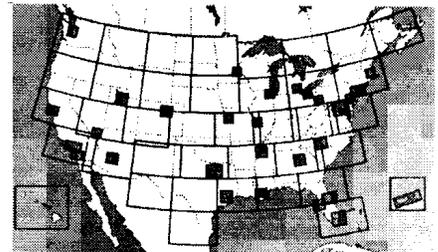
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CLASSIFIEDS...

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

Misc. For Sale:

- 3 1/8" mechanical tach and cable from -6A/160hp. Cable was new, tach rebuilt, used 500hrs, works fine, went to small electric unit. \$50
Contact Kevin Lane, 503-233-1818 or n3773@mciworld.com. 12/00

Paint For Sale — Changed my mind on paint schemes (twice) after buying paint. Have several unopened quantities of PPG Concept acrylic urethane available cheap:
1 gal. #13594 Spanish Blue (dark blue)
1 qt. #27381 Golden Mist Metallic
1 qt. #71844 Pop Red
Gallon: \$153, sell \$50. Quarts: \$57 new, sell \$25
Great for practice!
Randy Lervold, randy@rv-8.com, 360-817-9091

Avery rivet/dimple arbor for sale - Good condition. \$90. Randall Henderson, 503-297-5045 randalh@home.com, 3/01

Lowrance Airmap 300 — For sale at \$575.00. Greg Halverson 503-591-0105, 12/00

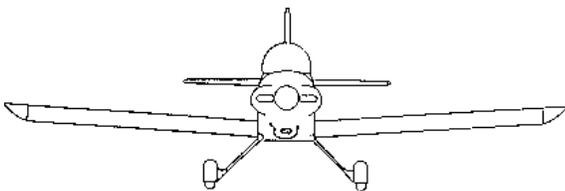
Hangar at Scappoose - Available for 6 mo.-1 yr, \$120. Call Mike Billiar, 503-645-1946, 2/01

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

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

WANTED

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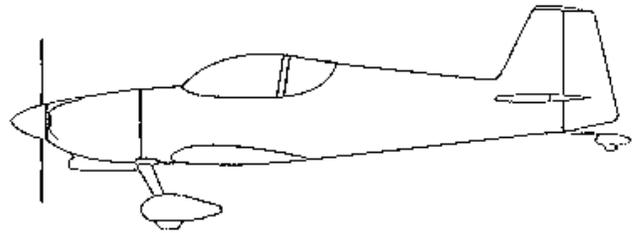


Use 'em!

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



Newsletter Delivery

Our member database continues to hover around the 150 mark (presently 148). Newsletter delivery is split 68 mail, 80 e-mail. I'd like to encourage those still receiving b/w snail mail to switch to e-mail delivery. Some of the benefits include...

- **Faster delivery:** you receive the newsletter 2-3 days ahead of snail mail.
- **Full COLOR:** with the increasing use of photos this adds another dimension you don't want to miss.
- **Storage flexibility:** you can print it on your own printer, or leave it stored electronically, or both.

If you're interested but unsure let me send you a test copy. Just send me an e-mail (randy@rv-8.com) and I'll send you a test copy.

Lastly, I would encourage ALL members to make sure I have your e-mail address even if you don't get your newsletter that way. I occasionally send out e-mail to all on important notices.

Thanks!

...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, obrento@aracnet.com**. Please observe our Tool Policy:

Home Wing Tool Policy

- Everything goes through Brent — do not give the tool to another member.
- Brent will keep an accurate sign-out sheet for each item so he knows where it is at all times.
- Brent will inspect all tools upon their return. If there is any damage he will ask you to pay for the repair (with the threat of public humiliation if you fail to be a grown-up).

The ability to have use of these expensive tools is a real membership benefit, let's respect the group's assets.

Home Wing Tools

HVLP paint sprayer, turbine type. Includes gun and air turbine.

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.

In addition to the Home Wing's tools, certain benevolent members have tools they may be willing to loan. Let the editor know if you have jigs, tools, or shop space to loan, exchange, or otherwise provide — at no cost — or if you are looking for something specific to borrow.

Tools For Loan

<i>Item</i>	<i>Owner/lender</i>	<i>Phone / e-mail</i>
Custom cutting wheel mandrel (for cutting your canopy)	Stan VanGrunsven	
Prop tach (calibrate your tach)	Mike McGee	503-534-1219, jmpcrftr@teleport.com
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, n3773@mciworld.com
Aircraft tire bead breaker, for tire removal	Kevin Lane	503-233-1818, n3773@mciworld.com
Special letter drill used to ream rear spar bolts/straight reamer for rear spar/	Kevin Lane	503-233-1818, n3773@mciworld.com
Lasar T-300 magneto timing tool.	Randy Lervold	360-817-9091, randy@rv-8.com
Precision Steel Fuselage Jig for RV-6/6A	Bill Drake	360-687-1698, rv6134WD@uswest.net,

Home Wing info:

A non-profit volunteer organization dedicated to building and flying Van's RV Series Aircraft

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 Flying activities coordinator Randall Henderson 503-297-5045, randallh@home.com
 Annual fly-in leader Don Wentz 503-543-2298
 Home Wing web site www.edt.com/homewing
 Webmaster Randall Henderson randallh@home.com

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Home Wing Membership Sign-up/Renewal

To join or renew, fill out this form 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, payment method, and any other information that has changed. Please don't forget your e-mail address and newsletter distribution method.

Use this form for address changes too!

Name: _____ Home phone: _____
 Address: _____ Work phone: _____
 City, State, Zip: _____ E-Mail: _____

Project: RV-3 <input type="checkbox"/> RV-4 <input type="checkbox"/> RV-6 <input type="checkbox"/> RV-6A <input type="checkbox"/> RV-8 <input type="checkbox"/> RV-8A <input type="checkbox"/> RV-9A <input type="checkbox"/>	Status: Not started <input type="checkbox"/> Empennage <input type="checkbox"/> Wings <input type="checkbox"/> Fuselage <input type="checkbox"/> Finish kit <input type="checkbox"/> Flying <input type="checkbox"/>	Newsletter Distribution: Mail <input type="checkbox"/> E-mail (pdf) <input type="checkbox"/>	Payment: Check <input type="checkbox"/> Cash <input type="checkbox"/> Info change only <input type="checkbox"/>
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